P

REGULATIONS FOR THE LIBRARY
OF THE
Massachusetts Horticultural Society,
ADOPTED 1861.

ARTICLE I.

All Books, Manuscripts, Drawings, Engravings, Paintings, Models, Furniture, and other articles appertaining to the Library, shall be confined to the special care of the Committee on the Library.

ARTICLE II.

PRESENTED
TO THE
Massachusetts Horticultural Society
BY
Franklin Bachelder
Sept. 6, 1892.

Books charged to him as herein required, shall pay a fine of twenty cents per week, for every volume so retained. And if at the re-opening of the Library, any Book shall still be unreturned, the person by whom it is retained shall pay for the said Book or set, as provided in Article VI, together with any fines which may have accumulated thereon; and a notice to this effect shall be forthwith mailed to him by the Librarian.

ARTICLE VIII.

No member shall loan a Book to any other person, under the penalty of a fine of $1.00.

ARTICLE IX.

When a written request shall be left at the Library for a particular Book then out, it shall be retained for the person requiring it, for one week after it shall have been returned.

ARTICLE X.

Every Book shall be numbered in the order which it is arranged in the Books of Record, and also have a copy of the foregoing regulations affixed to it.

See Johnson's History of English Gardening
pp. 76, 77. editions 1597. 1615, '18, '23. '26, '48, '49
Again much enlarged in 1665 and '76

F 4425

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When any Books or Publications are added to the Library, a list thereof shall be posted up in the Library Room, and all such additions shall be withheld from circulation for the term of one month.

ARTICLE III.

The following Books of Record shall be kept:—

No. 1. A Catalogue of the Books.

No. 2. A Catalogue of the Manuscripts, Drawings, Engravings, Paintings, Models, and all other articles.

No. 3. A list of all Donations, Bequests, Books, or other articles presented to the Society, with a date thereof, and the name and residence of the donor.

ARTICLE IV.

Rare and costly Books shall not be taken from the Library Room. A list of such works as are to be withheld from circulation shall be made out from time to time by the Library Committee, and placed in the hands of the Librarian.

ARTICLE V.

No more than two volumes shall be taken out by any member at one time, or retained longer than three weeks; and for each volume retained beyond that time a fine of ten cents per week shall be paid by the person so retaining it. And a fraction of a week shall be reckoned as a whole week in computing fines.

ARTICLE VI.

Every Book shall be returned in good order (regard being had to the necessary wear thereof with proper usage), and if any Book shall be lost or injured, the person to whom it stands charged shall, at the election of the Committee on the Library, replace it by a new volume or set, or pay for it at its value to the Society.

ARTICLE VII.

All Books shall be returned to the Library for examination on or before the first Saturday in July, annually, and remain till after the third Saturday of said month, and every person neglecting to return any Book or Books charged to him as herein required, shall pay a fine of twenty cents per week, for every volume so retained. And if at the re-opening of the Library, any Book shall still be unreturned, the person by whom it is retained shall pay for the said Book or set, as provided in Article VI, together with any fines which may have accumulated thereon; and a notice to this effect shall be forthwith mailed to him by the Librarian.

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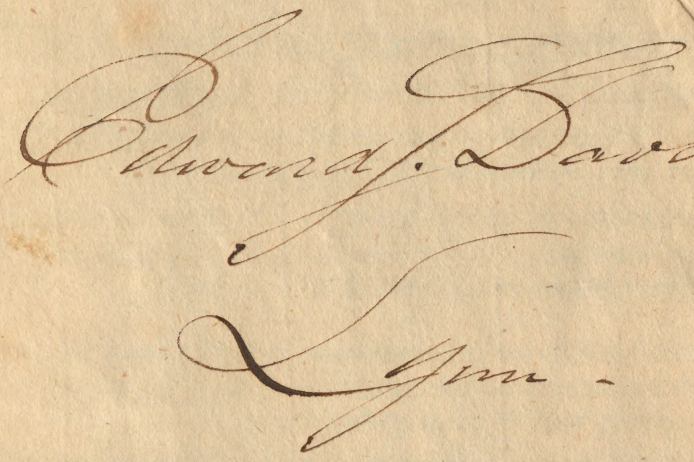

Edward S. Davis.
Lynn.

A NEW ORCHARD and Garden:

OR

The best way for planting, grafting, and to make *any ground good, for a rich Orchard*: *Particularly in the North*, and generally for the whole kingdome of *England*, as in nature, *reason, situation, and all probabilitie, may and doth appeare.*

With the Country Housewifes Garden for herbes of common vse, their *vertues, seasons, profits, ornaments, varietie of knots, models for trees, and* plots for the best ordering of Grounds and Walkes.

AS ALSO

The Husbandry of Bees, with their seuerall vses and annoyances, all being the experience of 48. yeeres labour, and now the second time corrected and much enlarged, by *William Lawson.*

Whereunto is newly added the Art of propagating Plants, with the true ordering *of all manner of Fruits, in their gathering, carrying home, and preseruation.*

Skill and paines bring fruitfull gaines.

Nemo sibi natus.

Printed at *London* by *I. H.* for ROGER IACKSON, and are to be sold at his shop neere Fleet-street Conduit. 1623.

*D4 a S 6, 1892
L425n
1623
DE-ACID 2004

TO THE RIGHT VVORSHIPFVLL,

SIR HENRY BELOSSES
Knight and Baronet.

Worthy Sir,

HEn in many yeeres by long experience I had furniſhed this my Northerne Orchard and Countrey Garden with needfull plants and vſefull herbe: I did impart the view thereof to my friends, who reſorted to me to conferre in matters of that nature, they did ſee it, and ſeeing it deſired, and I muſt not denie now the publiſhing of it (which then I allotted to my priuate delight) for the publike profit of others. Wherefore, though I could pleade cuſtome the ordinary excuſe of all Writers, to chuſe a Patron and Protector of their Workes, and ſo ſhroud my ſelfe from ſcandall vnder your honourable fauour, yet haue I certaine reaſons to excuſe this my preſumption: Firſt, the many courteſies

tesies you haue vouchsafed me. Secondly, your delightfull skill in matters of this nature. Thirdly, the profit which I receiued from your learned discourse of Fruit-trees. Fourthly, your animating and assisting of others to such endeuours. Last of all, the rare workes of your owne in this kinde: all which to publish vnder your protection, I haue aduentured (as you see.) Vouchsafe it therefore entertainment, I pray you, and I hope you shall finde it not the vnprofitablest seruant of your retinue: for when your serious employments are ouerpassed, it may interpose some commoditie, and raise your contentment out of varietie.

Your Worships

most bounden,

WILLIAM LAWSON.

THE PREFACE
to all well minded.

ART hath her first originall out of experience, which therefore is called the Schoolemistresse of fooles, because she teacheth infallibly, and plainly, as drawing her knowledge out of the course of Nature, (which neuer failes in the generall) by the senses, feelingly apprehending, and comparing (with the helpe of the minde) the workes of nature; and as in all other things naturall, so especially in Trees: for what is Art more than a prouident and skilfull Collectrix of the faults of Nature in her particular workes, apprehended by the senses? As when good ground naturally brings forth thistles, trees stand too thicke, or too thin, or disorderly, or (without dressing) put forth vnprofitable suckers, and such like. All which, and a thousand more, Art reformeth, being taught by experience: and therefore must we count that Art the surest, that stands vpon experimentall rules, gathered by the rule of reason (not conceit) of all other rules the surest.

Whereupon haue I of my meere and sole experience, without respect to any former written Treatise, gathered these rules, and set them downe in writing, not daring to hide the least talent giuen me of my Lord and Master in Heauen: neither is this iniurious to any, though it differ from the common opinion

in diuers points, to make it knowne to others, what good I haue found out in this facultie by long triall and experience. I confesse freely my want of curious skill in the Art of planting. And I admire and praise Plinie, Aristotle, Virgil, Cicero, *and many others for wit and iudgement in this kinde, and leaue them to their times, manner, and seuerall Countries.*

I am not determined (neither can I worthily) to set forth the praises of this Art: how some, and not a few, euen of the best, haue accounted it a chiefe part of earthly happinesse, to haue faire and pleasant Orchards, as in Hesperia *and* Thessaly, *how all with one consent agree, that it is a chiefe part of Husbandry (as* Tully de senectute) *and Husbandry maintaines the world; how ancient, how profitable, how pleasant it is, how many secrets of nature it doth containe, how loued, how much practised in best places, and of the best: This hath already beene done by many. I only aime at the common good. I delight not in curious conceits, as planting and graffing with the root vpwards, inoculating Roses on Thornes, and such like, although I haue heard of diuers, proued some, and read of moe.*

The Stationer hath (as being most desirous with me, to further the common good) bestowed much cost and care in hauing the Knots and Models by the best Artizan cut in great varietie, that nothing might be any way wanting to satisfie the curious desire of those that would make vse of this booke.

And I shew a plaine and sure way of planting, which I haue found good by 48. *yeeres (and moe) experience in the North part of* England: *I preiudicate and enuie none, wishing yet all to abstaine from maligning that good (to them vnknowne) which is well intended. Farewell.*

Thine, for thy good,

W. L.

The Contents.

CHap.1. Of the Gardner, he must be religious, skilfull, painfull. His wages. pag. 1
Chap. 2. Of the Soyle. pag. 3
The kinds of trees. ibid.
Barren earth, plaine, moist. pag.4
Grassie, naturally plaine, crust of the earth. pag.5
Chap.3. Of the Site. Low and neere a riuer. ibid.
Markham. Winds, Sunne, trees against a wall. pag.6,7
Chap. 4. Of the Quantitie. pag.8
Orchard compared with a corne field or vineyard. ibid.
Compared with a garden. The quantitie. Want no hindrance. pag.9
Chap.5. The Forme. pag.10
The Model in Portraiture. pag.11
Chap. 6. Of Fences. Effect of euill fences. The fence your owne. Kinds of fence. Earthen wals. pag.12
Pale and Raile. Stone wals, Quicke wood and Moats. pag.13
Chap. 7. Of Sets. Slips. Burknots. 14
Vsuall Sets. Maine roots cut. Stow sets remoued. pag.15
Tying of trees. Signes of diseases. Suckers. Good sets. pag.16
A running plant. ibid.
Sets bought. The best sets. Vnremoued how. pag.17
Sets vngrafted best of all. Time of remouing. pag.18
Remoue soone. The manner of setting. Set in the crust. Moyster good. pag.20
Grafts must be fenced. pag.21
Chap.8. Of the distance of trees. p.22
Hurts of too neere planting. Remedie. All touches hurtfull. pag.22,23
The best distance of trees. Parts of a tree. pag.23
Waste ground in an Orchard. pag.24
Chap.9. Of placing trees. pag.25
Chap.10. Of Grafting. pag.26
A Graffe. Kinds of grafting. Graft how. A Graft what. Eyes. pag.26,27
Time of grafting. Gathering Graffes. pag.28
Graffes of old trees. Where taken. Emmits. Inciſing. pag.28,29
A great stocke. Packing. pag.30
Inoculating. Graffing in the Scutchion. pag.31
Chap.11. Of dreſſing trees. Neceſſitie of right dreſſing trees. ibid.
Timber wood euill dreſt. pag.32
The cauſe of hurts in wood. How to dreſſe timber trees. pag.33
Profit of trees dreſſed. The end of trees. Trees will take any forme. pag.34
The end of trees. How to dreſſe a fruit tree. pag.35
Benefits of good dreſſing. pag.36
Time beſt for proyning. Dreſſe betimes. pag.37
Faults of euill dreſt trees. The remedie. Forme altered. Dreſſing old trees. 1. Long boall, 2. Water boughes. pag.38
Barke pild and remedie. 3. Fretters. 4. Suckers. 5. One principall top or bough. pag.39

Inſtruments

Instruments for dressing. ibid.
Chap. 12. Of foyling. Necessitie of foyling. Trees great suckers. pag.40
Great bodies. ibid.
Time fit for foyling. Kinds of foyle. pag.41,42
Chap. 13. Of annoyances. pag.42
Euils in an Orchard. Gals, Canker, Mosse. pag.43
Weaknesse in setting. Bark-bound. Wormes. Barke pild. Wounds. pag.43,44
Hurts on trees. Ants. Earewigs. Caterpillars. Externall euils. pag.44
Deere. Birds. Other trees. pag.45
Winds. Frosts. Weeds. Wormes. Moales. pag.46
Wilfull annoyances. pag.47
Chap.14. Of the age of trees. ibid.
Parts of a trees age. Mans age. pag.48
The age of timber trees. How age of trees is discerned. pag.50
Chap. 15. Of gathering and keeping of fruit. ibid.
Cheries. Apples. Drie stalkes. Ouer-laden trees. Instruments. Bruises. Keeping. pag.51
Chap.16. Of the profits. pag.52
Cidar and Perry. ibid.
Fruit. Waters. Conserues. ibid.
Chap.17. Of Ornament. pag.53
Delight the chiefe end of Orchards. ibid.
An Orchard delightsome. An Orchard is Paradise. Causes of wearisomenesse. Orchard is the remedie. All delight in Orchards. This delights all the senses. Delighteth old age. pag.53,54
Causes of delight. Flowers, Borders, and Squares. Mounts. Diall. Musicke. Walks. Seats. Order of trees. Borders. pag.54,55
Shapes of men and beasts. Mazes. Bowle Alley. Buts. Herbes. Conduict. Riuer. Moats. Bees. pag.55,56
Vine. Birds. Nightingale. Robin red-breast. Wren. Black-bird. Thrush. 56

THE BEST, SVREST, AND READIEST WAY TO make a good *Orchard* and *Garden.*

CHAP. I.

Of the Gardner, and his Wages.

WHosoeuer desireth and endeuoureth to haue a pleasant, and profitable Orchard, must (if he be able) prouide himselfe of a Fruiterer, religious, honest, skilfull in that faculty, and therewithall painfull: By religious, I meane (because many thinke religion but a fashion or custome to goe to Church) maintaining, and cherishing things religious: as Schooles of learning, Churches, Tythes, Church-goods, and rights; and aboue all things, Gods word, and the Preachers thereof, so much as he is able, practising prayers, comfortable conference, mutuall instruction to edifie, almes, and other workes of Charity, and all out of a good conscience. Religious.

Honestie in a Gardner, will grace your Garden, and all your house, and helpe to stay vnbridled seruingmen, giuing offence to none, not calling your name into question by dishonest acts, nor infecting your family by euill counsell or example. For there is no plague so infectious as Popery and knauery, he will not purloine your profit, nor hinder your pleasures. Honest.

Concerning his skill, hee must not be a Scholist, to make shew of or take in hand that, which he cannot performe, especially in so weighty a thing as an Orchard: than the which, there can be no humane thing more excellent, either for plea- Skilfull.

sure or profit, as shall (God willing) be proued in the treatise following. And what an hinderance shall it be, not onely to the owner, but to the common good, that the vnspeakable benefit of many hundred yeares shall be lost, by the audacious attempt of an vnskilfull Arborist?

Painfull. The Gardner had not need be an idle, or lazie Lubber, for so your Orchard being a matter of such moment, will not prosper. There will euer be some thing to doe. Weedes are alwaies growing. The great mother of all liuing Creatures, the Earth, is full of seed in her bowels, and any stirring giues them heat of Sunne, and being laid neere day, they grow: Mowles worke daily, though not alwaies alike. Winter herbes at all times will grow (except in extreme frost.) In Winter your young trees and herbes would be lightned of snow, and your Allyes cleansed: drifts of snow will set Deere, Hares, and Conyes, and other noysome beasts ouer your walles and hedges, into your Orchard. When Summer cloathes your borders with greene and peckled colours, your Gardner must dresse his hedges, and antike workes: watch his Bees, and hiue them: distill his Roses, and other herbes. Now begins Summer Fruit to ripe, and craue your hand to pull them. If he haue a Garden (as he must need) to keepe, you must needs allow him good helpe, to end his labours which are endlesse, for no one man is sufficient for these things.

Wages. Such a Gardner as will conscionably, quietly and patiently, trauell in your Orchard, God shall crowne the labors of his hands with toyfulnesse, and make the clouds drop fatnesse vpon your trees, he will prouoke your loue, and earne his wages, and fees belonging to his place: The house being serued, fallen fruit, superfluity of herbes, and flowres, seedes, graffes, sets, and besides other offall, that fruit which your bountifull hand shall reward him withall, will much augment his wages, and the profit of your Bees will pay you backe againe.

If you be not able, nor willing to hire a Gardner, keepe your profits to your selfe, but then you must take all the paines: And for that purpose (if you want this faculty) to instruct you, haue I vndertaken these labours, and gathered these Rules, but chiefly respecting my countries good.

CHAP.

CHAP. II.

Of the Soyle.

Fruit-Trées most common, and méetest for our northerne Countries: (as Apples, Peares, Cheries, Filberds, redde & white Plumms, Damsons, and Bulles,) for we meddle not with Apricockes nor Peaches, nor scarcely with Quinches, which will not like in our cold parts, vnlesse they be helped with some reflex of Sunne, or other like meanes, nor with bushes, bearing berries, as Barberies, Gosberries, or Grosers, Raspberies, and such like, though the Barbery be wholesome, and the trée may be made great: doe require (as all other trées doe) a blacke, fat, mellow, cleane and well tempered soyle, wherin they may gather plenty of good sap. Some thinke the Hasell would haue a chanilie rocke, and the Sallow, and Eller a waterish marish. The Soile is made better by deluing, and other meanes, being well melted, and the wildnesse of the earth and weeds (for euerie thing subiect to man, & seruing his vse, not well ordered, is by nature subiect to the curse,) is killed by frosts and drought, by fallowing and laying on heapes, and if it be wild earth, with burning. Kindes of trees. Soyle.

If your ground be barren (for some are forced to make an Orchard of barren ground) make a pit three quarters deepe, and two yards wide, and round in such places, where you would set your trées, and fill the same with fat, pure, and mellow earth, one whole foot higher than your Soyle, and therein set your Plant. For who is able to manure an whole Orchard plot, if it be barren? But if you determine to manure the whole site, this is your way: digge a trench halfe a yard deepe, all along the lower (if there be a lower) side of your Orchard plot, casting vp all the earth on the inner side, and fill the same with good short, hot, and tender mucke, and make such another Trench, and fill the same as the first, and so the third, and so throughout your ground. And by this meanes your plot shall be fertile for your life. But be sure you set your trées, neither in dung nor barren earth. Barren Earth.

Your ground must be plaine, that it may receiue, and Plaine.

kéepe moysture, not onely the raine falling thereon, but also water cast vpon it, or descending from higher ground by sluices,
Moyst. Conduits, &c. For I account moysture in Summer very néedfull in the soyle of trées, and drought in Winter. Prouided, that the ground neither be boggie, nor the inundation be past 24. houres at any time, and but twise in the whole Summer, and so oft in Winter. Therefore if your plot be in a Banke, or haue a descent, make Trenches by degrées, Alleys, Walkes, and such like, so as the Water may be staied from passage. And if too much water be any hinderance to your walkes (for déle walkes doe well become an Orchard, and an Orchard them:) raise your walkes with earth first, and then with stones, as bigge as Walnuts: and lastly, with grauell. In Summer you néed not doubt too much water from heauen, either to hurt the health of your body, or of your trées. And if ouerflowing moiest you after one day, amend it then by déepe trenching.

Some for this purpose digge the soyle of their Orchard to receiue moisture, which I cannot approue: for the rootes with digging are oftentimes hurt, and especially being digged by some vnskilfull seruant: For the Gardiner cannot doe all himselfe. And moreouer, the roots of Apples and Peares, being laid nére day, with the heat of the Sunne, will put forth suckers, which are a great hinderance, and sometimes with euill guiding, the destruction of trées, vnlesse the deluing be very shallow, and the ground laid verie leuell againe. Cheries and plummes without deluing, will hardly or neuer (after twenty yeares) be kept from such suckers, nor aspes.

Grasse. Grasse also is thought néedfull for moysture, so you let it not touch the rootes of your trées: for it will breede mosse, and the boall of your tree nére the earth would haue the comfort of the sunne and aire.

Some take their ground to bee too moist when it is not so, by reason of waters standing thereon, for except in soure marshes, springs, and continuall ouer-flowings, no earth can be too moist. Sandy and fat earth will auoid all water falling by receit. Indeed a stiffe clay will not receiue the water, and therefore if it be grassie or plaine, especially hollow, the water will abide, and it will seeme waterish, when the fault is in the want of manuring, and other good dressing.

This

This plainnesse which we require, had need be naturall, because to force an euen ground will destroy the fatnesse. For euery soile hath his crust next day wherein trees and herbes put their rootes, and whence they draw their sap, which is the best of the soile, and made fertile with heate and cold, moisture and drought, and vnder which by reason of the want of the said temperature, by the said foure qualities, no tree nor herbe (in a manner) will or can put root. As may bee seene if in digging your ground, you take the weeds of most growth: as grasse or docks, (which will grow though they lye vpon the earth bare) yet bury them vnder the crust, and they will surely dye and perish, and become manure to your ground. This crust is not past 15. or 18. inches deepe in good ground, in other grounds lesse. Hereby appeares the fault of forced plaines, viz. your crust in the lower parts, is couered with the crust of the higher parts, and both with worse earth: your heights hauing the crust taken away, are become meerely barren: so that either you must force a new crust, or haue an euill soile. And be sure you leuell, before you plant, lest you bee forced to remoue, or hurt your plants by digging, and falling amongst their roots. Your ground must be cleered as much as you may of stones, and grauell, walls, hedges, bushes and other weeds.

Naturally plain.

Crust of the earth.

CHAP. III.

Of the Site.

THere is no difference, that I find betwixt the necessity of a good soile, and a good site of an Orchard. For a good soile (as is before described) cannot want a good site, and if it doe, the fruit cannot be good, and a good site will much mend an euill soile. The best site is in low grounds, (and if you can) neere vnto a Riuer.

Low and neere a Riuer.

High grounds are not naturally fat. And if they haue any fatnesse by mans hand, the very descent in time doth wash it away. It is with grounds in this case as it is with men in a common wealth. Much will haue more: and once poore, seldome or neuer rich. The raine will send, and wash, and the wind will blow fatnesse from the heights to the hollowes, where

it will abide, and fatten the earth though it were barren before.

Hence it is, that we haue seldome any plaine grounds, and low, barren: and as seldome any heights naturally fertill. It is vnspeakable, what fatnesse is brought to low grounds by Inundations of waters. Neither did I euer know any barren ground in a low plaine by a Riuer side. The goodnesse of the soile in Howl or Hollow-dernes, in *Yorkeshire*, is well knowne to all that know the Riuer Humber, and the huge bulkes of their Cattell there. By estimation of them that haue seene the low grounds in Holland, and Zealand, they farre surpasse the most Countries in Europe for fruitfulnesse, and onely because they lye so low. The world cannot compare with *Ægypt*[a], for fertility, so farre as *Nilus* doth ouer flow his bankes. So that a fitter place cannot be chosen for an Orchard, than a low plaine by a riuer side. For besides the fatnesse which the water brings, if any cloudy mist or raine be stirring, it commonly falls downe to, and followes the course of the Riuer. And where see we greater trées of bulk and bough, then standing on or nére the waters side? If you aske why the plaines in Holdernes, & such countries are destitute of woods? I answer that men and cattell (that haue put trées thence, from out of Plaines to void corners) are better then trées. Neither are those places without trées. Our old fathers can tell vs, how woods are decaied, & people in the rowmth of trées multiplied. I haue stood somewhat long in this point, because some doe vtterly condemne a moist soile for fruit-trées.

[a] Psal. 1. 3. Eze. 17. 8. Eccl. 39. 17.

Markham.

A low ground is good to auoid the danger of winds, both for shaking down your vnripe fruit, and blowing down your trées. Fruit blowne vnripe, are small worth: and though they be ripe, yet being bruised with the fall, (especially if they be big) they are not good but for present vse. Trees the most (that I know) being loaden with wood, for want of proyning, and growing high, by the vnstilfulnesse of the Arborist, must nods be in continuall danger of the South-west, West, and North-west winds, especially in September and March, when the aire is most temperate from extreme heat, and cold, which are deadly enemies to great winds. Wherefore chuse your ground low. Or if you be forced to plant in a higher ground, let high and strong walls, houses, and Trées, as Wall-nuts, Plane-trees, Okes, and Ashes, placed in good order, be your fence for winds.

Winds. chap. 13

The

The sucken of your Dwelling house, descending into your Orchard (if it be cleanly conueighed) is good.

The Sunne (in some sort) is the life of the world. It maketh proud growth, and ripens kindly, and speedily, according to the golden tearme: *Annus fructificat, non tellus.* Therefore in the Countries, neerer approching the *Zodiake*, the Sunnes habitation, they haue better, and somer ripe fruit, then we that dwell in these frozen parts. Sunne.

This prouoketh most of our great Arborists, to plant Apricockes, Cheries, and Peaches, by a wall, and with tacks, and other meanes to spread them vpon, and fasten them to a wall, to haue the benefit of the immoderate reflere of the Sun, which is commendable, for the hauing of faire, good, & some ripe fruit. But let them know it is more hurtfull to their trees then the benefit they reape thereby can require: as not suffring a Tree to liue the tenth part of his age. It helpes Gardners to worke, for first the wall hinders the rots, because into a dry and hard wall of earth or stone, a tree will not, nor cannot put any rot to profit, but especially it stops the passage of sap, whereby ŷ barke is wounded, and the wood, and diseases grow, so that the tree becomes short of life. For as in the body of a man, the leaning or lying on some member, wherby the course of bloud is stopt, makes that member as it were dead for the time, till the bloud returne to his course, and I thinke, if that stopping should continue any time, the member would perish for want of bloud (for the life is in the bloud, and so endanger the body: so the sap is the life of the Tree, as the bloud is to mans body: neither doth the tree in winter (as is supposed) want his sap, no more then mans body his bloud, which in winter, & time of sleep drawes inward. So ŷ the dead time of winter, to a tree, is but a night of rest: for the tree at al times, euen in winter is nourished with sap, & groweth as well as mans body. The chilling cold may well some little time stay, or hinder the proud course of the sap, but so little & so short a time, that in euery calme, & mild season, euen in the depth of winter (if you marke it) you may easily perceiue, the sap to put out, & your trees to increase their buds, which were formed in the Summer before, and may easily then bee discerned: for leaues fall not off, till they be thrust off, with the knots or buds, whereupon it comes to passe that Trees cannot beare fruit Trees against a wall.

plen-

plentifully two yeares together, and make themselues ready to blossome against the seasonablenesse of the next Spring.

And if any frost be so extreme, that it stay the sap too much, or too long, then it kils the forward fruit in the very bud, and sometimes the tender leaues and twigs, but not the tree. Wherefore (to returne) it is perillous to stop the sap. And where, or when, did you euer see a great tree packt on a wall? May, who did euer know a tree so vnkindly splat, come to age? I haue heard of some, that out of their imaginary cunning, haue planted such Trees, on the North side of the wall, to auoid drought, but the heat of the Sunne is as comfortable (which they should haue regarded) as the drought is hurtfull. And although water is a soueraigne remedy against drought, yet want of Sun is no way to be helped. Wherefore to conclude this Chapter, let your ground lie so, that it may haue the benefit of the south, and west Sunne, and so low and close, that it may haue moisture, and increase his fatnesse (for trees are the greatest suckers and pillers of earth, and (as much as may be) free from great winds.

CHAP. IIII.

Of the quantitie.

IT would bee remembred what a benefit riseth, not only to euery particular owner of an Orchard, but also to the common-wealth, by Fruit, as shall be shewed in the 16. chapter (God willing) whereupon must needs follow: the greater the Orchard is (being good and well kept) the better it is, for of good things, being equally good, the biggest is the best. And if it shall appeare, that no ground a man occupieth (no, not the Corne-field) yeeldeth more gaine to the purse, and house-keeping (not to speake of the vnspeakable pleasure) quantity for quantity, than a good Orchard (besides the cost in planting, and dressing an Orchard, is not so much by farre, as the labour and seeding of your Corne-fields, nor for durance of time, comparable, besides the certainty of the one before the other) I see not how any labour, or cost in this kinde, can be idly or wastfully bestowed, or thought too much. And what other thing is a

Orchard as good as a corn field.

Vine-

Vineyard (in those Countries where Vines do thriue) than a large Orchard of trées bearing fruit? Or what difference is there in the iuice of the Grape, and our Cyder and Perry, but the goodnesse of the Soile and Clime where they grow? which maketh the one more ripe, and so more pleasant then the other. Whatsoeuer can be said for the benefit rising from an Orchard, that makes for the largenes of the Orchards bounds. And (me thinks) they doe preposterously, that bestow more cost and labours, and more ground in and vpon a Garden than vpon an Orchard, whence they reape and may reape both more pleasure and more profit, by infinite degrées. And further, that a Garden neuer so fresh, and faire, and well kept, cannot continue without both renewing of the earth, and the herbs often, in the short and ordinary age of a man: whereas your Orchard well kept shall dure diuers hundred yeeres, as shall be shewed chapter 14. In a large Orchard there is much labour saued, in fencing, and otherwise: for three little Orchards, or few trees, being (in a manner) all out-sides, are so blasted and dangered, and commonly in keeping neglected, and require a great fence; whereas in great Orchards, trees are a mutuall defence one to another, and the keeping is regarded, and lesse fencing serues fiue acres together, than three in seuerall inclosures.

Compared with a Vineyard.

Compared with a garden

Now what quantity of ground is méetest for an Orchard can no man prescribe, but that must be left to euery mans seuerall iudgement, to be measured according to his ability and will, for other necessaries besides fruit must be had, and some are more delighted with Orchards then others.

What quantity of ground.

Want is no hindrance.

Let no man hauing a fit plot pleade pouerty in this case, for an Orchard once planted will maintaine it selfe, and yéeld infinite profit besides. And I am perswaded, that if men did know the right and best way of planting, dressing, and kéeping trées, & felt the profit and pleasure thereof, both they that haue no Orchards would haue them, and they that haue Orchards, would haue them larger, yea fruit trées in their hedges, as in Worstershire, &c. And I thinke, that the want of planting, is a great losse to our common-wealth, & in particular, to the owners of Lordships, which Landlords themselues might easily amend, by granting longer terme, and better assurance to their Tenants, who haue taken vp this Prouerbe, Botch and sit, Build and flit:

How Landlords, by their tenants may make flourishing orchards in England.

for who wil build, or plant for another mans profit? Or the Parliament might enioyne euery occupier of grounds, to plant and maintaine for so many acres of fruitfull ground, so many seuerall trées or kind of trées for fruit. Thus much for quantity.

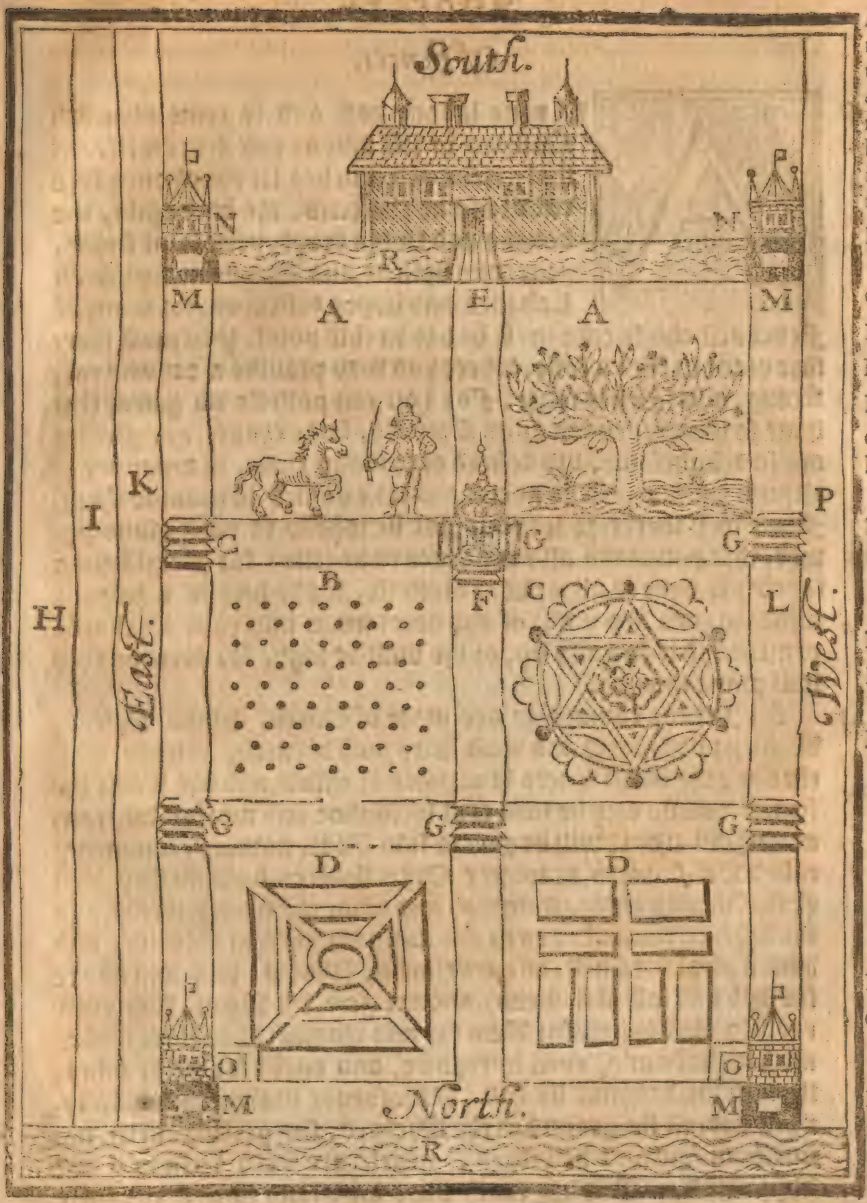
CHAP. V.

Of the Forme.

THe goodnesse of the Soile, and Site, are necessary to the well being of an Orchard simply, but the forme is so farre necessary, as the owner shall thinke méet, for that kind of forme wherewith euery particular man is delighted, we leaue it to himselfe, *suum cuique pulchrum.* The forme that men like in generall is a square, for although roundnesse be *formæ perfectissima*, yet that principle is good where necessity by art doth not force some other forme. Now for as much as one principall end of Orchards is recreation by walkes, and vniuersally walkes are straight, it followes that the best forme must be square, as best agréeing with streight walkes: yet if any man be rather delighted with some other forme, or if the ground will not beare a square, I discommend not any forme so it bee formall. And a square may be drawn out of any forme to make streight walks; and no forme of it selfe is either good or bad for the trées. If within one large square the Gardner shall make one round Labyrinth or Maze with some kind of Berries, it will grace your forme, so there be sufficient roomth left for walkes. So will foure or moe round knots doe. For it is to be noted, that the eye must be pleased with the forme. I haue séene squares rising by degrées with staies from your house-ward, according to this forme which I haue, *Crassa quod aiunt Minerua*, with an vnsteady hand, rough hewen, for in forming the Country Gardners, the better sort may vse better formes, and more costly worke. What is néedfull more to be said, I referre that all (concerning the Forme,) to the chapter 17. of the ornaments of an Orchyard.

The vsuall forme is a square.

CHAP.



A. All these sq
must bee set
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& other ornan
must stand in s
betwixt the tr
in the border
fences.

B. Trees 20. ya
asunder.

C. Garden kn

D. Kitchen ga

E. Bridge.

F. Conduit.

G. Staires.

H. Walkes set
great wood t

I. Walkes set
great wood
about your
chard.

K. The out

L. The out fer
with stone fr

M. Mount. To
earth for a m
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round with
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earth in the m

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O. Good sta
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P. If the Riue
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it will be pl

CHAP. VI.

Of Fences.

Effect of euill fences.

ALl your labour past and to come about an Orchard is lost vnlesse you fence well. It shal grieue you much to see your young sets rubd lose at the roots, the barke pild, the boughs and twigs cropt, your fruit stolne, your trees broken, and all your many yeres Labours and hopes destroyed, for want of Fences. A chiefe care must be had in this point. You must therfore plant in such a soile, where you may prouide a conuenient, strong, and seemely fence. For you can possesse no goods, that haue so many enemies as an Orchard, loke chapt. 13. Fruits are so delightsome, and desired of so many (nay, in a manner of all) and yet few will be at cost and take paines to prouide them. Fence well therefore, let your plot be wholly in your owne power, that you make all your fence your selfe: for Neighbours fencing is none at all, or very careless. Take héed of a doore or window (yea of a wall) of any other mans into your Orchard: yea, though it be naild vp, or the wall be high, for perhaps they will proue théeues.

Let the fence be your owne.

Kinds of fences. Earthen walls.

All Fences commonly are made of Earth, Stone, Bricke, Wood, or both earth and wood. Dry wall of earth, and dry Ditches, are the worst fences saue pales or railes, and doe waste the soonest, vnlesse they be well copt with slowe and morter, whereon at Highill-tide it will be good to sow Wall-flowers, commonly called Bée-flowers, or winter Gilly-flowers, because they will grow (though amongst stones) and abide the strongest frost and drought, continually greene and flowring euen in Winter, and haue a pleasant smell, and are timely, (that is, they will floure the first and last of flowers) and are good for Bées. And your earthen wall is good for Bées dry and warme. But these fences are both vnseemly, euill to repaire, and onely for néed, where stone or wood cannot be had. Whosoeuer makes such Walls, must not pill the ground in the Orchard, for getting earth, nor make any pits or hollowes, which are both vnseemly and vnprofitable. Old dry earth mixt with sand is best for these.

This

This kinde of wall will soone decay, by reason of the trées which grow nére it, for the roots and boales of great trées, will increase, undermine, and ouerturne such wals, though they were of stone, as is apparant by Ashes, Kountrées, Burt-trées, and such like, carried in the chat, or berrie, by birds into stone wals.

Fences of Dead-wood, as pales, will not last, neither will railes either last or make good fence. Pale and Raile.

Stone walls (where stone may be had) are the best of this sort, both for fencing, lasting, and shrouding of your young trées. But about this must you bestow much paines and more cost, to haue them handsome, high and durable. Stone walls.

But of all other (in mine opinion) Quickwood, and Moats or Ditches of Water, where the ground is leuell, is the best fence. In vnequall grounds, which will not kéepe water, there a double ditch may be cast, made streight and leuell on the top, two yards broad for a faire walke, fiue or sixe foot higher then the soyle, with a gutter on either side, two yards wide, and foure foot déepe set without, with three or foure chesse of Thornes, and within with Cherry, Plumme, Damson, Bullys, Filberds, (for I loue these trees better for their fruit, & as well for their forme, as fruit) for you may make them take any forme. And in euery corner (and middle if you will) a mount would be raised, whereabout the wood may clasp, powdered with wood-binde: which will make with dressing a faire, pleasant, profitable, and sure fence. But you must be sure that your quicke thornes either grow wholly, or that there be a supplie betime, either with planting new, or plashing the old where want is. And assure your selfe, that neither wood, stone, earth, nor water, can make so strong a fence, as this after 7. yeares growth. Quicke wood & Moates.

Moates, Fish-ponds, and (especially at one side a River,) within and without your fence, will afford you fish, fence, and moysture to your trées, and pleasure also; if they be so great & déepe that you may haue Swans, & other water birds, good for deuouring of vermine, and a boat for many good vses. Moates.

It shall hardly auaile you to make any fence for your Orchard, if you be a niggard of your fruit. For as liberality will saue it best from noysome neighbours, liberality I say is the best fence, so Iustice must restraine rioters. Thus when your ground is temper'd, squared, & fenced, it is time to prouide for planting.

CHAP. VII.

Of Sets.

There is not one point (in my opinion) about an Orchard more to be regarded, than the choice getting and setting of good plants, either for readinesse of having good fruit, or for continuall lacking. For whosoeuer shall faile in the choise of good Sets, or in getting, or gathering, or setting his Plants, shall neuer haue a good or lasting Orchard. And I take want of skill in this facultie to be a chiefe hinderance to the most Orchards, and to many for hauing of Orchards at all.

Slips. Some for readinesse vse slips, which seldome take rot: and if they doe take, they cannot last, both because their rot hauing a maine wound will in short time decay the body of the tree: and besides that rootes being so weakely put, are soone nipt with drought or frost. I could neuer see (lightly) any slip but of Apples onely set for trees.

Bur-knot. A bur-knot kindely taken from an Apple tree, is much better and surer. You must cut him close at the root end, an handfull vnder the knot, (Some vse in Summer about *Lammas* to circumcise him, and put earth to the knot with hay roaps, and in winter cut him off and set him, but this is curiosity, needlesse, and danger with remouing, and drought.) and cut away all his twigs saue one, the most principall, which in setting you must leaue aboue the earth, burying his trunck in the crust of the earth for his root. It matters not much what part of the bough the twig growes out of. If it grow out of or neere the root end, some say such an Apple will haue no coare nor kirnell. Or if it please the Planter, he may let his bough be crooked, and leaue out his top end, one foot or somewhat more, wherein will be good grafting, if either you like not, or doubt the fruit of the bough (for commonly your Bur-knots are Summer fruit) or if you thinke he will not, couer his wound safely.

Vsuall Sets. The most vsuall kinde of Sets, is Plants with rootes growing of kirnels of Apples, Peares, and Crabs, or stones of Cherries, Plummes, &c. remoued out of a Nursery, Wood, or other Orchard, into, and set in your Orchard in their due places.

I grant this kinde to be better than either of the former, by much, as more sure and more durable. Herein you must note, that in sets so removed, you get all the rootes you can, and without bruising of any; I vtterly dislike the opinion of those great Gardiners, that following their Bookes would haue the maine rootes cut away, for tops cannot grow without roots. And because none can get all the rootes, and remouall is an hinderance, you may not leaue on all tops, when you set them: For there is a proportion betwixt the top and root of a tree, euen in the number (at least) in the growth. If the rootes be many, they will bring you many tops, if they be not hindred. And if you vse to frowe or top your tree too much or too low, and leaue no issue, or little for sap, (as is to be seene in your hedges) it will hinder the growth of roots and boale, because such a kinde of frowing is a kinde of smothering, or choaking the sap. Great wood, as Oake, Elme, Ashe, &c. being continually kept downe, with sheeres, knife, axe, &c. neither boale nor root will thriue, but as an hedge or bush. If you intend to graffe in your Set, you may cut him closer with a greater wound, and nearer the earth, within a foot or two, because the graft or grafts will couer his wound. If you like his fruit, and would haue him to be a tree of himselfe, be not so bold: this I can tell you, that though you doe cut his top close, and leaue nothing but his bulke, because his rootes are few, if he be (but little) bigger than your thumbe (as I wish all Plants removed to be) he will safely recouer his wound within seuen yeeres; by good guidance that is: If the next time of dressing immediatly aboue his vppermost sprig, you cut him off sloape cleanely, so that the sprig stand on the backe side, (and if you can Northward, that the wound may haue the benefit of Sunne) at the vpper end of the wound: and let that sprig onely be the boale. And take this for a generall rule; Euery young Plant, if he thriue, will recouer any wound aboue the earth, by good dressing, although it be to the one halfe, and to his very heart. This short cutting at the remoue, saues your Plants from Winde, and neede the lesse or no staking. I commend not Tying or Leaning of Trees against Poles or Stayres; for it breedes obstruction of Sappe and wounds incurable. All remouing of Trees as great as your arme, or aboue, is dangerous: though some-

Maine rootscut.

Stow sets remoued.

Generall rule.

Tying of Trees.

Generall rule.

time

time some such will grow, but not continue long: Because they be tainted with deadly wounds, either in the root or top. (And a tree once throughly tainted is neuer good.) And though they get some hold in the earth with some lesser taw, or tawes, which giue some nourishment to the body of the tree: yet the heart being tainted, he will hardly euer thriue; which you may easily discerne by the blacknesse of the boughs at the heart, when you dresse your trees. Also, when he is set with moe tops than the rootes can nourish, the tops decaying, blacken the boughs, and the boughes the armes, and so the boale at the very heart. Or this taint in the remouall, if it kill not presently, but after some short time, it may be discerned by blacknesse or yellownesse in the barke, and a small hungred leafe. Or if your remoued Plant put forth leaues the next and second Summer, and little or few sprayes, it is a great signe of a taint, and next yeares death. I haue knowne a tree tainted in setting, yet grow, and beare blossomes for diuers yeeres: and yet for want of strength could neuer shape his fruit.

Signes of diseases. Cha. 13.

Suckers good sets.

Next vnto this, or rather equall with these Plants, are Suckers growing out of the rootes of great Trees, which Cherries & Plummes doe seldome or neuer want: and bring taken kindly with their roots, will make very good Sets. And you may helpe them much by enlarging their rootes with the tawes of the tree, whence you take them. They are of two sorts: Either growing from the very rot of the tree: and here you must be carefull, not to hurt your tree when you gather them, by ripping amongst the rootes; and that you take them cleane away: for these are a great and continuall annoyance to the growth of your tree: and they will hardly be cleansed. Secondly, or they doe arise from some taw: and these may be taken without danger, with long and good rotes, and will soone become Trees of strength.

A Running Plant.

There is another way, which I haue not throughly proued, to get not only Plants for grafting, but Sets to remaine for Trees, which I call a Running Plant: the manner of it is this: Take a Kote or kirnell, and put it into the middle of your plot, and the second yere in the Spring, geld his top, if he haue one principall, (as commonly by nature they haue) and let him put forth only foure Cyons toward the foure corners of the

Orchard,

Orchard, as neere the earth as you can. If hee put not foure, (which is rare) stay his top till he haue put so many. When you haue such foure, cut the Stocke allope, as is aforesaid in this Chapter, hard aboue the vppermost spring, and keepe those foure without Cyons cleane and streight, till you haue them a yard and an halfe, at least, or two yards long. Then the next spring in grafting time, lay downe those foure spraies, towards the foure corners of your Orchard, with their tops in an heape of pure and good earth, raised as high as the rot of your Cyon, (for sap will not descend) and a sod to keepe them downe, leauing nine or twelue inches of the top to looke vpward. In that hill he will put roots, and his top new Cyons, which you must spread as before, and so from hill to hill till hee spread the compasse of your ground, or as farre as you list. If in bending, the Cyons cracke, the matter is small, cleanse the ground and hee will recouer. Euery bended bough will put forth branches and become Trees. If this Plant be of a burre knot, there is no doubt. I haue proued it in one Branch my selfe: and I know at Wilton in Cleeue-land a Peare-tree of a great bulke and age, blowne close to the earth, hath put at euery knot rootes into the earth, and from rot to top, a great number of mighty armes or trees, filling a great roomth, like many trees, or a little Orchard. Much better may it be done by Art in a lesse Tree. And I could not mislike this kinde, saue that the time will be long before it come to perfection.

Many vse to buy Sets already grafted, which is not the best way: for first, All remoues are dangerous: Againe, there is danger in the carriage: Thirdly, it is a costly course of Planting: Fourthly, euery Gardiner is not trusty to sell you good fruit: Fiftly, you know not which is best, which is worst, and so may take most care about your worst trees. Lastly, this way keepes you from practise, and so from experience, in so good, Gentlemanly, Scholerlike, and profitable a Faculty. Settes bought.

The onely best way (in my opinion) to haue sure and lasting Sets, is neuer to remoue: for euery remoue is an hinderance, if not a dangerous hurt or deadly taint. This is the way: The Plot-forme being laid, and the Plot appointed where you will plant euery Set in your Orchard, dig the roomth, where your Sets shall stand, a yard compasse, The best Sets. Vnremoued how.

and make the earth mellow and cleane, and mingle it with a few coale ashes, to auoid Wormes: and immediatly after the first change of the Moone, in the latter end of Februarie, the earth being a fresh turned ouer, put in euery such roomth three or foure Kirnels of Apples or Peares, of the best: euery Kirnell in an hole made with your finger, finger-deepe, a foot distant one from another: and that day Moneth following, as many moe, (lest some of the former misse) in the same compasse; but not in the same holes. Hence (God willing) shall you haue rootes enough. If they all, or diuers of them come vp, you may drawe (but not dig) vp (nor put downe) at your pleasure, the next November. How many soeuer you take away, to giue or bestow elsewhere, be sure to leaue two of the proudest. And when in your second and third yeere you Graffe (if you Graffe then at all) leaue the one of those two vngrafted, lest in grafting the other you faile: For I finde by tryall, that after first or second grafting in the same Stocke, being mist (for who hits all) the third misse puts your Stocke in deadly danger, for want of issue of sap. Yea, though you hit in grafting, yet may your graffes with Winde or otherwise bee broken downe. If your graffes or graffe prosper, you haue your desire, in a Plant vnremoued, without taint, and the fruit at your owne choise, and so you may (some little earth being removed) pull, but not digge vp the other Plant or Plants in that roomth. If your graffe or Stocke, or both perish, you haue another in the same place, of better strength to worke vpon. For thrining without snub hee will ouerlay your grafted Stocke much. And it is hardly possible to misse in grafting so often, if your Gardiner be worthy his name.

Sets vngrafted best of all.

It shall not bee amisse (as I iudge it) if your Kirnels be of choice fruit, and that you see them come forward proudly in their body, and beare a faire and broad leafe in colour, tending to a greenish yellow (which argues pleasant and great fruit) to try some of them vngrafted: for although it be a long time ere this come to beare fruit, ten or twelue yeeres, or moe; and at their first bearing, the fruit will not seeme to bee like his owne kinde: yet am I assured, vpon tryall, before twenty yeeres growth, such Trees will increase the bignesse and goodnesse of their fruit, and come perfectly to their owne kinde.

Trees

Trées (like other breeding creatures) as they grow in yeeres, bignes, and strength; so they mend their fruit. Husbands and Huswiues finde this true by experience, in the rearing of their yong Store. More then this, there is no trée like this for soundnesse & durable last, if his keeping and dressing be answerable. I grant, the readiest way to come soone to fruit is grafting: because in a manner, all your Graffes are taken of fruit-bearing Trées.

Now when you haue made choise of your Sets to remoue, the ground being ready, the best time is, immediatly after the fall of the Leafe, in, or about the change of the Moone, when the sap is most quiet: for then the sap is in turning: for it makes no stay, but in the extremity of drought or cold. At any time in winter, may you transplant trées, so you put no Ice nor Snow to the roote of your Plant in the setting: and therefore open, calme, and moist weather is best. To remoue, the leafe being ready to fall, and not fallen, or buds apparantly put forth in a moist, warme season, for need, sometime may doe well: but the safest is to walke in the plaine trodden path. Time of remouing. Generall rule.

Some hold opinion that it is best remouing before the fall of the leafe, and I heare it commonly so practised in the South by our best Arborists, the leafe not fallen: & they giue the reason to be, that the descending of the sap will make speedy rots. But marke the reasons following, and I thinke you shall find no soundnes, either in that positiõ or practise, at least in the reason.

1. I say, it is dangerous to remoue when the sap is not quiet, for euery remoue giues a main checke to the stirring sap, by staying the course thereof in the body of your plant, as may appeare in trées remoued any time in Summer, they commonly die, nay hardly shall you saue the life of the most young and tender plant of any kind of wood (scarcely herbes) if you remoue them in the pride of sap. For proud sap vniuersally stayed, by remouall, euer hinders, often taints, and so presently, or in very short time kils. Sap is like bloud in mans body, in which is the life, Cap. 3. pag. 8. If the bloud vniuersally be cold, life is excluded; so is sap tainted by vntimely remouall. A stay by drought, or cold, is not so dangerous (tho dangerous if it be extreme) because more naturall.

2. The sap neuer descends, as men suppose, but is consolidated and transubstantiated into the substance of the trée, and

passeth (alwayes aboue the earth) vpward, not only betwixt the barke and the wood, but also into & in both body and barke, tho not so plentifully, as may appeare by a trée budding, nay fructifying 2. or 3. yeeres, after he be circumcised, at the very root, like a Riuer that inlargeth his chanell by a continuall descent.

3. I cãnot perceiue what time they wold haue ẏ sap to descend. At Midsummer in a biting drought it staies, but descends not, for immediatly vpõ moisture it makes second shoots, at (or before rather) Michaeltide, when it shapens his buds for next yéeres fruit. If at the fal of the leafe, I grant, about that time is ẏ greatest stand (but not descent) of sap, which begins somewhat before the leafe fall, but not long, & therefore at that time must néeds be the best remouing, not by reason of the descent, but stay of sap.

4. The sap in his course hath his profitable and apparent effects, as the growth of the Trée, couering of wounds, putting of buds, &c. Whereupon it followes, if the sap descend, it must néeds haue some effect to shew it.

5. Lastly, boughs plasht and laid lower than the root, die for want of sap descending, except where it is forced by the maine stream of the sap, as in top boughs hanging like water in pipes, or except the plasht bough lying on the ground put roots of his owne, yea vnder boughs which wee commonly call water-boughs, can scarcely get sap to liue, yea in time dye, because the sap doth presse so violently vpward, and therefore the fairest shoots and fruit are alwaies in the top.

Obiect. If you say that many so remoued thriue, I say that somewhat before the fall of the leafe (but not much) is the stand, for the fall and the stand are not at one instant, before the stand is dangerous. But to returne.

Remoue soone. The sooner in Winter you remoue your Sets, the better; the latter the worse: For it is very perillous if a strong drought take your Sets before they haue made good their rooting. A Plant set at the Fall, shall gaine (in a manner) a whole yeeres growth of that which is set in the Spring after.

The manner of setting. I vse in the setting to bee sure, that the earth bee mouldy, (and somewhat moist) that it may runne among the small tangles without straining or bruising: and as I fill in earth to his root, I shake the Set easily to and fro, to make the earth settle the better to his roots: and withall easily with my

my foot I put in the earth close; for ayre is noysome, and will follow concauities. Some prescribe Dates to be put in with the earth. I could like it, if I could know any reason thereof: and they vse to set their Plant with the same side toward the Sun: but this conceit is like the other. For first I would haue euery tree to stand so free from shade, that not onely the root (which therefore you must keepe bare from grasse) but body, boughes, and branches, and euery spray, may haue the benefit of Sun. And what hurt, if that part of the tree, that before was shadowed, be now made partaker of the heat of the Sun? In turning of Bees, I know it is hurtfull, because it changeth their entrance, passage, and whole worke: But not so in Trees.

Set as deepe as you can, so that in any wise you goe not beneath the crust. Looke Chap. 2. Set in the crust.

We spake in the second Chapter of moysture in generall: but now especially hauing put your remoued plant into the earth, powre on water (of a puddle were good) by distilling presently, and so euery weeke twice in strong drought, so long as the earth will drinke, & refuse by ouerflowing. For moysture mollifies, & both giues leaue to the roots to spread, & makes the earth yeeld sap and nourishment, with plentie & facilitie. Nurses (they say) giue most and best milke after warme drinkes. If your ground be such that it will keepe no moysture at the root of your plant, such plant shall neuer like, or but for a time. There is nothing more hurtfull for young trees than piercing drought. I haue knowne trees of good stature after they haue beene of diuers yeares growth, and thriue well for a good time, perish for want of water, and very many by reason of faints in setting. Moyster good.

It is meet your sets and grafts be fenced, till they be as big as your arme, for feare of annoyances. Many waies may sets receiue dammages, after they be set, whether they be grafted or ingrafted. For, although we suppose, that no noysome beast, or other thing must haue accesse among your trees: yet by casualtie, a Dog, Cat, or such like, or your selfe, or negligent friend bearing you company, or a shrewd boy, may tread or fall vpon a young and tender plant or graft. To auoyd these and many such chances, you must stake them round a prettie distance from the set, neither so neere, nor so thicke, but that it may haue the benefit of Sunne, raine, and aire. Grafts must be fenced.

your stakes (small or great) would be so surely put, or driuen into the earth, that they breake not, if any thing happen to leane vpon them, else may the fall be more hurtfull, than the want of the fence. Let not your stakes shelter any weedes about your sets, for want of Sunne is a great hinderance. Let them stand so far off, that your grafts spreading receiue no hurt, either by rubbing on them, or of any other thing passing by. If your stocke be long, and high grafted (which I much discommend (except in need) because there the sap is weake, and they are subiect to strong wind, and the lighting of birds) tie easily with a soft list three or foure prickes vnder the clay, and let their tops stand aboue the grafts, to auoid the lighting of Crowes, Pyes, &c. vpon your grafts. If you sticke some sharpe thornes at the roots of your stakes, they will make hurtfull things keepe off the better. Other better fences for your grafts I know none. And thus much for sets and setting.

CHAP. VIII.

Of the distance of Trees.

I know not to what end you should prouide good ground, well fenced, & plant good sets; & when your trees should come to profit, haue all your labours lost, for want of due regard to the distance of placing of your trees. I haue seene many trees stand so thicke, that one could not thriue for the throng of his neighbours. If you doe marke it, you shall see the tops of trees rubd off, their sides galled like a galled horses backe, and many trees haue more stumps than boughs, and most trees no well thriuing, but short, stumpish, & euill thriuing boughs: like a Corne-field ouer-seeded, or a towne ouer-peopled, or a pasture ouer-laid, which the Gardiner must either let grow, or leaue the tree very few boughs to beare fruit. Hence small thrift, galls, wounds, diseases, and short life to the trees: and while they liue greene, little, hard, worme-eaten, and euill thriuing fruit arise, to the discomfort of the owners.

Hurts of tooneere planting.

Remedy. To preuent which discommoditie, one of the best remedies is, the sufficient & fit distance of trees. Therefore at the setting of your plants you must haue such a respect, that the distance of them

them be such, that euery tree be not annoiance, but an helpe to his fellowes: for trees (as all other things of the same kinde) should shrowd, and not hurt one another. And assure your selfe that euery touch of trees (as well vnder as aboue the earth) is hurtful. Therefore this must be a generall rule in this Art: That no tree in an Orchard well ordered, nor bough, nor Tyon, drop vpon, or touch his fellowes. Let no man thinke this vnpossible, but loke in ỹ eleuenth chapter of dressing of trees. If they touch, the winde will cause a forcible rub. Young twigs are tender, if boughs or armes touch and rub, if they are strong, they make great galls. No kinde of touch therefore in trees can be good.

Generall rule.

All touches hurtfull.

Now it is to be considered what distance amongst sets is requisite, and that must be gathered from the compasse and rowth, that each tree by probability will take and fill. And herein I am of a contrary opinion to all them, which practise or teach the planting of trees, that euer yet I knew, read, or heard of. For the common space betweene tree and tree is ten foot: if twenty foot, it is thought very much. But I suppose twenty yards distance is small enough betwixt tree and tree, or rather too too little. For the distance must needs be as far as two trees are well able to ouerspread, and fill, so they touch not, by one yard at least. Now I am assured, and I know one Apple-tree, set of a slip *finger-great*, in the space of twenty yeares, (which I count a very small part of a trees age, as is shewed Chapter 14.) hath spred his boughs eleuen or twelue yards compasse, that is, fiue or six yards on euery side. Hence I gather, that in forty or fiftie yeares (which yet is but a small *time of his age*) a tree in good soile, well liking, by good dressing (for that is much auailable to this purpose) will spread double at the least, viz. twelue yards on a side, which being added to twelue allotted to his fellow, make twenty and foure yards, and so farre distant must euery tree stand from another. And loke how farre a tree spreads his boughs aboue, so far doth he put his roots vnder the earth, or rather further, if there be no stop, nor let by walls, trees, rocks, barren earth, and such like: for an huge bulk, and strong armes, massie boughs, many branches, and infinite twigs, require wide-spreading rootes. The top hath the vast aire to spread his boughs in, high and low, this way and that way: but the roots are kept in the cruft of the earth, they may not goe downeward, nor

The best distance of trees.

Parts of a tree.

vpward

vpward out of the earth, which is their element, no more than the Fish out of the Water, Camelion out of the Aire, nor Salamander out of the Fire. Therefore they must néeds spread far vnder the earth. And I dare well say, if nature would giue leaue to man by Art, to dresse the roots of trées, to take away the tawes, and tangles, that lay and fret and grow superfluously and disorderly, (for euery thing *sublunary* is cursed for mans sake) the tops aboue being answerably dressed, we should haue trées of wonderfull greatnesse, and infinite durance. And I perswade my selfe that this might be done sometimes in Winter, to trées standing in faire plaines and kindly earth, with small or no danger at all. So that I conclude, that twenty foure yards are the least space that Art can allot for trées to stand distant one from another.

Waste ground in an orchard.

If you aske me what vse shall be made of that waste ground betwixt trée and trée: I answer: If you please to plant some trée or trées in that middle space, you may, and as your trées grow contiguous, great and thicke, you may at your pleasure take vp those last trées. And this I take to be the chiefe cause, why the most trées stand so thicke. For men not knowing (or not regarding) this secret of needfull distance, and louing fruit of trées planted to their hands, thinke much to pull vp any, though they pine one another. If you or your heires or successors would take vp some great trées (past setting) where they stand too thicke, be sure you doe it about midsummer, and leaue no maine rootes. I destinate this space of foure and twenty yards, for trées of age and stature. More than this, you haue borders to be made for walkes, with Roses, Berries &c.

And chiefly consider: that your Orchard, for the first twenty or thirtie yéares, will serue you for many Gardens, for Safron, Licoras, roots, and other herbes for profit, and flowers for pleasure: so that no ground need be walked if the Gardiner be skilfull and diligent. But be sure you come not nære with such déepe deluing the rootes of your trées, whose compasse you may partly discerne, by the compasse of the tops, if your top be well spread. And vnder the droppings and shadow of your trées, be sure no herbs will like. Let this be said for the distance of Trées.

CHAP.

CHAP. IX.

Of the Placing of Trees.

THE placing of Trées in an Orchard is well worth the regard: For although it must bee granted, that any of our foresaid Trées (chap. 2.) will like well in any part of your Orchard, being good and well dressed earth: yet are not all Trées alike worthy of a good place. And therefore I wish that your Filberd, Plummes, Damsons, Bullesse, and such like, be vtterly removed from the plaine soile of your Orchard into your fence: for there is not such fertility and easefull growth, as within: and there also they are more subiect, and can better abide the blasts of Æolus. The Cheries and Plummes being ripe in the hot time of Summer, and the rest standing longer, are not so soone shaken as your better fruit: neither if they suffer losse, is your losse so great. Besides that, your fences and ditches will deuoure some of your fruit growing in or nére your hedges. And séeing the continuance of all these (except Nuts) is small, the care of them ought to be the lesse. And make no doubt, but the fences of a large Orchard will containe a sufficient number of such kind of Fruit-trees in the whole compasse. It is not materiall, but at your pleasure, in the said fences, you may either intermingle your seuerall kinds of fruit-trees, or set euery kind by himselfe, which order doth very wel become your better and greater fruit. Let therefore your Apples, Peares, and Quinches, possesse the soile of your Orchard, vnlesse you be especially affected to some of your other kinds: and of them let your greatest Trees of growth stand furthest from Sunne, and your Quinches at the South side or end, and your Apples in the middle, so shall none be any hinderance to his fellowes. The Warden-tree, and winter Peare will challenge the preheminence for stature. Of your Apple-trees you shall finde difference in growth. A good Pippin will grow large, and a Costard tree: stead them on the North side of your other Apples, thus being placed, the least will giue Sun to the rest, and the greatest will shroud their fellowes. The fences and out-trees will guard all.

CHAP. X.

Of Grafting.

Of grauing or caruing.

NOw are we come to the most curious point of our faculty: curious in conceit, but indeed as plaine and easie as the rest, when it is plainly shewne, which we commonly call Grafting, or (after some) Grafting. I cannot Etymologize, nor shew the originall of the word, except it come of grauing and caruing. But the thing or matter is: The reforming of the Fruit of one Tree with the fruit of another, by an artificiall transplacing or transposing of a twig, bud or leafe,

Grafting what.

A Graffe (commonly called a Graft) taken from one tree of the same, or some other kind, and placed or put to, or into another tree in due time and manner.

Kinds of grafting.

Of this there be diuers kinds, but three or foure now especially in vse: to wit, Ozafting, inciſing, packing on, grafting in the scutchion, or inoculating: whereof the chiefe and most vsuall, is called grafting (by the generall name, *Catahexocen:*) for it is the most knowne, surest, readiest, and plainest way to haue store of good fruit.

It

It is thus wrought: You must with a fine, thin, strong, and sharpe Saw, made and armed for that purpose, cut off a foot aboue the ground, or thereabouts, in a plaine without a knot, or as nére as you can without a knot (for some Stocks will be knotty) your Stocke, set or plant, being surely stayed with your foot and legge, or otherwise streight ouerthwart (for the Stocke may bee croked) and then plaine his wound smoothly with a sharpe knife: that done, cleaue him cleanly in the middle with a cleauer, and a knocke or mall, and with a wedge of wood, Iron or Bone, two handfull long at least, put into the middle of that clift, with the same knocke, make the wound gape a straw breedth wide, into which you must put your Graffes. Graft how.

The graft is a top twigge taken from some other Tré (for it is folly to put a graffe into his owne Stocke) beneath the vppermost (and sometime in néed the second) knot, and with a sharpe knife fitted in the knot (and sometime out of the knot when néede is) with shoulders an inch downeward, and so put into the stock with some thrusting (but not straining) barke to barke inward. A Graft what.

Let your graffe haue thrée or foure eyes, for readinesse to put forth, and giue issue to the sap. It is not amisse to cut off the top of your graffe, and leaue it but fiue or sixe inches long, because commonly you shall sée the tops of long graffes die. The reason is this. The sap in grafting receiues a rebuke, and cannot worke so strongly presently, and your graffes receiue not sap so readily, as the naturall branches. When your graffes are cleanly and closely put in, and your wedge pulled out nimbly, for feare of putting your graffes out of frame, take well tempered morter, soundly wrought with chaffe or horsedung (for the dung of cattell will grow hard, and straine your graffes) the quantity of a Gooses egge, and diuide it iust, and therewithall, couer your stocke, laying the one halfe on the one side, and the other halfe on the other side of your graffes (for thrusting against your graffes) you moue them, and let both your hands thrust at once, and alike, & let your clay be tender, to yéeld easily; and all, lest you moue your graffes. Some vse to couer the clift of the Stocke, vnder the clay with a péece of barke or leafe, some with a lear-cloth of ware and butter, which as they be not much néed- Eyes.

full, so they hurt not, vnlesse that by being busie about them, you moue your grafts from their places. They vse also mosse tyed on aboue the clay with some briar, wicker, or other bands. These profit nothing. They all put the grafts in danger, with pulling and thrusting: for I hold this generall rule in grafting, and planting: if your stocke and grafts take, and thriue (for some will take, and not thriue, being tainted by some meanes in the planting or grafting) they will (without doubt) recouer their wounds safely and shortly.

Generall Rule.

Time of graffing.

The best time of grafting from the time of remouing your stocke is the next Spring, for that saues a second wound, and a second repulse of sap, if your stocke bee of sufficient bignesse to take a graft as big as your thumbe, to as big as an arme of a man. You may graft lesse (which I like) and bigger, which I like not so well. The best time of the yeere is in the last part of February, or in March, or beginning of Aprill, when the Sunne with his heat beginnes to make the sap stirre more rankely, about the change of Moone before you see any great apparancy of leafe or flowers, but onely knots and buds, and before they be proud, though it be sooner. Cheries, Peares, Apricocks, Quinces and Plummes would be gathered and grafted sooner.

Gathering graffes.

The graffes may be gathered sooner in February, or any time within a moneth, or two before you graffe, or vpon the same day (which I commend) If you get them any time before, for I haue knowne graffes gathered in December, and doe well, take heed of drought. I haue my selfe taken a bur knot of a tree, and the same day when he was laid in the earth about mid February, gathered grafts and put in him, and one of those graffes bore the third yeere after, and the fourth plentifully. Graffes of old Trees would be gathered sooner than of young trees, for they sooner breake and bud. If you keepe graffes in the earth, moisture with the heat of the Sunne will make them sprout as fast, as if they were growing on the tree. And therefore seeing keeping is dangerous, the surest way (as I iudge) is to take them within a weeke of the time of your grafting.

Graffes of old trees.

The grafts would be taken not of the proudest twigs, for it may be your Stocke is not answerable in strength. And therefore (say I) the grafts brought from South to vs in the North, although

although they take and thriue (which is somewhat doubtfull, by reason of the difference of the Clime and carriage) yet shall they in time fashion themselues to our cold Northerne Soyle, in growth, taste, &c. Nor of the worst, for want of strength may make them vnreadie to receiue sap (and who can tell but a worse graft is tainted) nor on the outside of your trée, for there should your trée spread but in the middest: for there you may be sure your Trée is no whit hindered in his growth or forme. Yee will still recouer inward, more than you would wish. If your clay clift in summer with drought, looke well in the Chinkes for Emmits and Earewigs, for they are cunning and close theeues, about grafts you shall finde them stirring in the morning or euening, and the rather in moist weather. I haue had many young buds of Graffes, euen in the flourishing, eaten with Ants. Let this suffice for grafting, which is in the faculty counted the chiefe secret, and because it is most vsuall, it is best knowne. Where taken. Emmits.

Graffes are not to be disliked for growth, till they wither, pine, and die. Vsually before Midsummer they breake, if they liue. Some (but few) keeping proud and grene, will not put till the second yeare, so is it to be thought of sets.

The first shew of putting is no sure signe of growth, it is but the sap the graffe brought with him from his trée.

So soone as you see the graft put for growth, take away the claie, for then doth neither the stocke nor the graffe need it (put a little fresh well-tempered claie in the hole of the stocke) for the claie is now tender, and rather keepes moisture than drought.

The other waies of changing the naturall fruit of Trées, are more curious than profitable, and therefore I minde not to bestow much labour or time about them, onely I shall make knowne what I haue proued, and what I doe thinke.

And first of incising, which is the cutting of the backe of the boale, a rine or branch of a trée at some bending or knée, shoulderwise with two gashes, onely with a sharpe knife to the wood: then take a wedge, the bignesse of your graffe sharpe ended, flat on the one side, agréeing with the trée, and round on the other side, and with that being thrust in, raise your barke, Incising.

then put in your graffe, fashioned like your wedge iust: and lastly couer your wound, and fast it vp, and take hed of straining.

A great stocke.

This will grow but to small purpose, for it is weake hold, and lightly it will be vnder growth. Thus may you graft betwixt the barke and the tree of a great stocke that will not easily bee clifted: But I haue tried a better way for great trees, viz. First, cut him off straight, and cleanse him with your knife, then cleane him into foure quarters, equally with a strong cleauer: then take for euery Clift two or three small (but hard) wedges iust of the bignesse of your grafts, and with those Wedges driuen in with an hammer open the foure clifts so wide (but no wider) that they may take your foure graffes, with thrusting, not with straining: and lastly couer and clay it closely, and this is a sure and good way of grafting: or thus, clift your stocke by his edges twice or thrice with your cleauer, and open him with your wedge in euery clift one by one, and put in your grafts, and then couer them. This may doe well.

Packing thus.

Packing on is, when you cut aslope a twig of the same bignesse with your graft, either in or besides the knot, two inches long, and make your graft agree iumpe with the Cyon, and gash your graft and your Cyon in the middest of the wound, lengthway, a straw breadth deepe, and thrust the one into the other, wound to wound, sap to sap, barke to barke, then tie them close and clay them. This may doe well. The fairest graft I haue in my little Orchard, which I haue planted, is thus packt on, and the branch whereon I put him, is his plentifull rote.

To be short in this point, cut your graft in any sort or fashion, two inches long, and ioyne him cleanly and close to any other sprig of any tree in the latter end of the time of grafting, when sap is somewhat rise, and in all probabilitie they will close and thriue: thus

The sprig. The graft. The twig. The graft.

Or any other fashion you thinke good.

Inoculating.

Inoculating is an eye or bud, taken barke and all from one tree, and placed in the roome of another eie or bud of another, cut both of one compasse, and there bound. This must be done in Summer, when the sap is proud.

Much

Much like vnto this is that, they call grafting in the ſcutchion. They differ thus: That héere you muſt take an eie with his leafe, or (in mine opinion) a bud with his leaues. (Note that an eie is for a Cyon, a budde is for flowers and fruit.) and place them on another trée, in a plaine (for ſo they teach) the place or barke where you muſt ſet it muſt be thus cut with a ſharpe knife, and the barke raiſed with a wedge, and then the eie or budde put in and ſo bound vp. I cannot denie but ſuch may growe. And your bud if he take wil flowre and beare fruit that yéere: as ſome grafts and ſets alſo, being ſet for bloomes. If theſe two kindes thriue, they reforme but a ſpray, and an vndergrowth. Thus you may place Roſes on Thornes, and Cheries on Apples, and ſuch like. Many write much more of grafting, but to ſmall purpoſe. Whom we leaue to themſelues, and their followers; and ending this ſecret we come in the next Chapter to a point of knowledge moſt requiſite in an Arbor, as well for all other woods as for an Orchard.

Grafting in the Scutchion

CHAP. XI.

Of the right dreſſing of Trees.

IF all theſe things aforeſaid were indéed performed, as wee haue ſhewed them in woods, you ſhould haue a perfect Orchard in nature and ſubſtance, begunne to your hand: And yet are all theſe things nothing, if you want that skill to dreſſe and kéepe your trées. Such is the condition of all earthly things, whereby a man receiueth profit or pleaſure, that they degenerate preſently without good ordering. Man himſelfe left to himſelfe, growes from his heauenly & ſpirituall generation, and becommeth beaſtly, yea deuilliſh to his owne kind, vnleſſe he be regenerate. No maruell then, if Trées make their ſhootes, and put their ſprayes diſorderly. And truly (if I were worthy to iudge) there is not a miſ-

Neceſſity of dreſſing trees.

chiefe

chiefe that bꝛéedeth greater and moꝛe generall harme to all the Oꝛchard (eſpecially if they be of any continuance) that euer I ſaw, (I will not except thꝛée) than the want of the skilfull dꝛeſſing of trées. It is a common and vnskilfull opinion, and ſaying, Let all grow, and they will beare moꝛe fruit: and if you lop away ſuperfluous boughes, they ſay, what a pitty is this? How many apples would theſe haue boꝛne? not conſidering there may ariſe hurt to your Oꝛchard, aſwell (nay rather) by abundance, as by want of wood. A ſound and thꝛiuing plant in a good ſoyle, will euer yéeld too much wood, and diſoꝛderly, but neuer too little. So that a ſkilfull and painfull Arboꝛiſt, néed neuer want matter to effect a plentifull and well dꝛeſt Oꝛchard: foꝛ it is an eaſie matter to take away ſuperfluous boughes (if your Gardner haue skill to know them) whereof your plants will yéeld abundance, and ſkill will leaue ſufficient well oꝛdered. All ages both by rules and experience doe conſent to a pꝛuining and lopping of trées: yet haue not any that I know deſcribed vnto vs (except in darke and generall woꝛds) what oꝛ which are thoſe ſuperfluous boughes, which we muſt take away, and that is the chiefe and moſt néedfull point to be knowne in lopping. And we may well aſſure our ſelues, (as in all other Arts, ſo in this) there is a vantage and dexterity, by skill, and an habit by pꝛactiſe out of experience, in the perfoꝛmance hereof foꝛ the pꝛofit of mankind; yet doe I not know (let me ſpeake it with the patience of our cunning Arboꝛiſts) any thing within the compaſſe of humane affaires ſo neceſſary, and ſo little regarded, not only in Oꝛchards, but alſo in all other timber trées, where oꝛ whatſoeuer.

Generall rule.

Timber wood euill dreſt.

How many foꝛeſts and woods? wherein you ſhall haue foꝛ one lively thꝛiuing trée, foure (may ſometimes 24.) euill thꝛiuing, rotten and dying trées, euen while they liue. And inſtead of trées thouſands of buſhes and thꝛubbes. What rottenneſſe? what hollowneſſe? what dead armes? withered tops? curtailed trunkes? what loades of moſſes? dꝛouping boughes? and dying bꝛanches ſhall you ſée euery where? And thoſe that like in this ſoꝛt are in a manner all vnpꝛofitable boughes, canked armes, cꝛoked, little and ſhoꝛt boales: what an infinite number of buſhes, ſhꝛubs, and skrogs of hazels, thoꝛnes, and other pꝛofitable wood, which might be

bꝛought

brought by dreſſing to become great and goodly Trees. Conſider now the cauſe: The leſſer wood hath beene ſpoiled with careleſſe, vnskilfull, and vntimely ſtowing, and much alſo of the great wood. The greater Trées at the firſt riſing haue filled and ouer-loaden themſelues with a number of waſtfull boughs and ſuckers, which haue not onely drawne the ſappe from the boale, but alſo haue made it knottie, and themſelues and the boale mollie for want of dreſſing, whereas if in the prime of growth they had beene taken away cloſe, all but one top (according to this patterne) and cleane by the bulke, the ſtrength of all the Sap ſhould haue gone to the bulke, and ſo he would haue recouered and couered his knots, and haue put forth a faire, long and ſtreight body (as you ſée) for timber profitable, huge great of bulke, and of infinite laſt.

Imagine the root to be ſpread farre wider.

The cauſes of hurts in wood.

Dreſſe timber trees how.

If all timber Trées were ſuch (will ſome ſay) how ſhould we haue crooked wood for wheeles, cogs, &c.

Anſw.

Anſw. Dreſſe all you can, and there will be enough crooked for thoſe vſes.

More than this, in moſt places, they grow ſo thicke, that neither themſelues, nor earth, nor any thing vnder or neere them can thriue, nor ſunne, nor raine, nor aire can do them, nor any thing neere or vnder them any profit or comfort.

I ſée a number of Hags, where out of one roote you ſhall ſee three or foure, (nay more) ſuch as mens vnskilfull greedineſſe, who deſiring many haue none good) pritty Oakes or Aſhes, ſtraight and tall, becauſe the root at the firſt ſhot giues Sap amaine: but if one only of them might be ſuffred to grow, and that well and cleanly pruned, all to his very top, what a Tree ſhould wee haue in time? And wee ſee by thoſe roots continually and plentifully ſpringing, notwithſtanding ſo deadly wounded. What a commodity ſhould ariſe to the owner, and the common-wealth, if wood were cheriſhed, and orderly dreſſed.

Profit of trees dreſſed.

The waſte boughs cloſely and skilfully taken away, would giue vs ſtore of fences and fewell, and the bulke of the tree in time would grow of huge length and bigneſſe. But here (me thinks) I heare an vnskilfull Arboriſt ſay, that trees haue their ſeuerall formes, euen by nature, the Peare, the Holly, the Aſpe, &c. grow long in bulke with few and little armes. The Oke by nature broad, and ſuch like. All this I grant: but grant me alſo, that there is a profitable end, and vſe of euery tree, from which if it decline (tho by nature) yet man by art may (nay muſt) correct it. Now other end of Trees I neuer could learne, than good timber, fruit much and good, and pleaſure. Vſes phyſicall hinder nothing a good forme.

The end of trees.

Trees will take any forme.

Neither let any man euer ſo much as thinke, that it is vnpoſſible, much leſſe vnpoſſible, to reforme any tree of what kinde ſoeuer. For (beleeue me) I haue tried it, I can bring any tree (beginning by time) to any forme. The Peare and Holly may be made to ſpread, and the Oke to cloſe.

But why doe I wander out of the compaſſe of mine Orchard into the Foreſts and woods? Neither yet am I from my purpoſe, if boales of timber trees ſtand in need of all the ſap, to make them great and ſtreight (for ſtrong growth and dreſſing make ſtrong trees) then it muſt needs be profitable for fruit (a

thing

thing more immediatly ſeruing a mans néed) to haue all the ſap his root can yéld: for as timber ſound, great and long, is the good of timber trees, and therefore they beare no fruit of worth: ſo fruit, good, ſound, pleaſant, great and much, is the end of fruitfull trées. That Gardner therefore ſhall performe his duty skilfully and faithfully, which ſhall ſo dreſſe his Trees, that they may beare ſuch and ſuch ſtore of fruit, which he ſhall neuer doe (I dare vndertake) vnleſſe he kéepe this order in dreſſing his Trées. The end of trees.

A fruit Trée ſo ſtanding, that there néed none other end of dreſſing but fruit (not ornaments for walkes, nor delight to ſuch as would pleaſe their eye only, and yet the beſt forme cannot but both adorne & delight) muſt be parted from within two foot (or thereabouts) of the earth, ſo high to giue liberty to dreſſe his root, and no higher, for drinking vp the ſap that ſhould féede his fruit, for the boale will be firſt, and beſt ſerued and fed, becauſe he is next the root, and of greateſt ware and ſubſtance, and that makes him longeſt of life, into two, three, or foure armes, as your ſtocke or graffes yéld twigs, and euery arme into two or more branches, and euery branch into his ſeuerall Cyons, ſtill ſpreading by equall degrées, ſo that his loweſt ſpray be hardly without the reach of a mans hand, and his higheſt be not paſt 2. yards higher, rarely (eſpecially in the middeſt) that no one twig touch his fellow. Let him ſpread as far as he liſt without any maſter-bough, or top equally. And when any bough doth grow ſadder and fall lower, than his fellowes (as they will with weight of fruit) eaſe him the next ſpring of his ſuperfluous twigs, and he will riſe: when any bough or ſpray ſhall amount aboue the reſt; either ſnub his top with a nip betwixt your finger and your thumbe, or with a ſharpe knife, and take him cleane away, and ſo you may vſe any Cyon you would reforme, and as your trée ſhall grow in ſtature and ſtrength, ſo let him riſe with his tops, but ſlowly, and early, eſpecially in the middeſt, and equally, and in bredth alſo, and follow him vpward with lopping his vnder growth and water-boughs, kéeping the ſame diſtance of two yards, but not aboue thrée in any wiſe, betwixt the loweſt and higheſt twigs. How to dreſſe a fruit tree

1 Thus ſhall you haue well liking, cleane ſkind, healthfull, great, and long-laſting trées. Benefits of good dreſſing

2 Thus ſhall your Tree grow low, and ſafe from winds, for his top will be great, broad and weighty.

3 Thus growing broad, ſhall your trees beare much fruit (I dare ſay) one as much as five of your common trees, and good without ſhadowing, dropping, and fretting: for his boughs, branches, and twigs ſhall be many, and thoſe are they (not the boale) which beare the fruit.

4 Thus ſhall your boale being little (not ſmall but low) by reaſon of his ſhortneſſe, take little, and yéeld much ſap to the fruit.

5 Thus your Trees by reaſon of ſtrength in time of ſetting ſhall put forth more bloſſomes, and more fruit, being free from faints; for ſtrength is a great helpe to bring forth much and ſafely, whereas weakneſſe failes in ſetting though the ſeaſon be calme.

Some vſe to bare Trees rots in Winter, to ſtay the ſetting till hotter ſeaſons, which I diſcommend, becauſe,

1 They hurt the rots.

2 It ſtaies it nothing at all.

3 Though it did, being but ſmall, with vs in the North, they haue their part of our April and Maies froſts.

4 Hindrance cannot profit weake trées in the ſetting.

5 They waſte much labour.

6 Thus ſhall your trée be eaſie to dreſſe, and without danger, either to the tree or the dreſſer.

7 Thus may you ſafely and eaſily gather your fruit without failing, bruiſing or breaking of Tyons.

This is the beſt forme of a fruit-tree, which I haue here only ſhadowed out for the better capacity of them that are led more with the eye, than the mind, craving pardon for the deformity, becauſe I am nothing skilfull either in painting or carving.

Imagine that the paper makes but one ſide of the Trée to appeare, the whole round compaſſe will giue leaue for many more armes, boughs, branches and Tyons.

The

The perfect forme of a Fruit tree.

If any thinke a tree cannot well be brought to this forme: *Experto crede Roberto.* I can ſhew diuers of them vnder twenty yeares of age.

The fitteſt time of the Moone for proyning is as of grafting, when the ſap is ready to ſtirre (not proudly ſtirring) and ſo to couer the wound, and of the yeare, a month before (or at leaſt when) you graffe. Dreſſe Peares, Apricoks, Peaches, Cherries, and Bullys ſooner. And old trees before young plants, you may dreſſe at any time betwixt Leafe and Leafe. And note, that where you take any thing away, the ſap the next ſummer will be putting: be ſure therefore when he puts a bud in any place where you would not haue him, rub it off with your finger. Time beſt for proining.

And heere you muſt remember the common homely Prouerbe: Soone crookes the tree that good Camrell muſt bee. Beginne betime with trees, and doe what you liſt: but if you let them grow great and ſtubborne, you muſt doe as the trees liſt. They will not bend but breake, nor be wound without danger. A ſmall branch will become a bough, and a bough an arme in bigneſſe. Then if you cut him, his wound will feſter, and hardly, without good skill, recouer: therefore, obſta Dreſſe betime.

Faults of euill dreſt trees, & the remedie.

principijs. Of ſuch wounds, and leſſer, or any bough cut off a handfull or more from the body, comes hollowneſſe, and vntimely death. And therfore when you cut, ſtrike cloſe, and cleane, and vpwards, and leaue no bunch.

The forme altered.

This forme in ſome caſes ſometimes may be altered: If your tree, or trees, ſtand nere your Walkes, if it pleaſe your fancie more, let him not breake, till his boale be aboue your head: ſo may you walke vnder your trees at your pleaſure. Or if you ſet your fruit trees for your ſhades in your Groues, then I reſpect not the forme of the tree, but the comelineſſe of the walke.

Dreſſing of old trees.

All this hitherto ſpoken of dreſſing, muſt be vnderſtood of young Plants, to be formed: it is meete ſomewhat be ſaid for the inſtruction of them that haue old trees already formed, or rather deformed: for, malum non vitatur niſi cognitum. The faults therefore of a diſordered tree, I finde to be fiue: 1. An vnprofitable boale: 2. Waterboughes: 3. Fretters: 4. Suckers: and 5. One principall top.

Faults are fiue, & their remedies.

1. Long boale.

A long boale aſketh much feeding, and the more he hath the more he deſires, and gets (as a drunken man drinke, or a couetous man wealth) and the leſſe remaines for the fruit, he puts his boughes into the aire, and makes them, the fruit, and it ſelfe more dangered with windes: for this I know no remedie, after that the tree is come to growth, once euill, neuer good.

No remedie.

2. Water boughs.

Water boughes, or vndergrowth, are ſuch boughes as grow low vnder others and are by them ouergrowne, ouerſhadowed, dropped on, and pinde for want of plentie of ſap, and by that meanes in time die: For the ſap preſſeth vpward; and it is like water in her courſe, where it findeth moſt iſſue, thither it floweth, leauing the other leſſer ſluces dry: euen as wealth to wealth, and much to more. Theſe ſo long as they beare, they beare leſſe, worſe, and fewer fruit, and waterish.

Remedy

The remedie is eaſie, if they be not growne greater than your arme. Lop them cloſe & cleane, & couer the middle of the wound, the next Summer when he is drie, with a ſalue made of tallow, tar, & a very little pitch, good for the couering of any ſuch wound of a great tree: vnleſſe it be barke-pild, and then a ſear-cloth of freſh Butter, Hony, and Waxe, preſently (while the wound is greene) applyed, is a ſoueraigne remedie in ſummer eſpecially. Some bind ſuch wounds with a thumbe rope of Hay, moiſt, and rub it with dung.

Barke-pild, and the remedie.

Fret-

Fretters are, when as by the negligence of the Gardner, two, or moe parts of the tree, or of diuers trées, as armes, boughs, branches, or twigs, grow so nére and close together, that one of them by rubbing, doth wound another. This fault of all other shewes the want of skill, or care (at least) in the Arborist: for here the hurt is apparant, and the remedy easie, séene to betime: galls and wounds incurable, but by taking away those members: for let them grow, and they will be worse and worse, and so kill themselues with ciuill strife for rowmth, and danger the whole trée. Auoid them betime therefore, as a common-wealth doth bosome-enemies. 3. Fretters. Touching. Remedy.

A Sucker is a long, proud, and disorderly Cyon, growing streight vp (for pride of sap makes proud, long & streight growth) out of any lower parts of the trée, receiuing a great part of the sap, and bearing no fruit, till it haue tyrannized ouer the whole tree: These are like idle and great Drones amongst Bées; and proud and idle members in a common-wealth. 4. Suckers.

The remedy of this is, as of water-boughes, vnlesse he be growne greater, then all the rest of the boughs, and then your Gardner (at your discretion) may leaue him for his boale, and take away all, or the most of the rest. If he be little, slip him, and set him, perhaps he will take: my fairest Apple-trée was such a Slip. Remedy.

One or two principall top boughs are as euill, in a manner, as Suckers, they rise of the same cause, and receiue the same remedy: yet these are more tolerable, because these beare fruit, yea the best: but Suckers of long doe not beare. 5. One principal top or bough, and remedy.

I know not how your trée should be faulty, if you reforme all your vices timely, and orderly. As these rules serue for dressing young trées and sets in the first planting: so may they well serue to helpe old trées, though not exactly to recouer them.

The Instruments fittest for all these purposes, are most commonly: For the great Trées an handsome, long, light Ladder of Firpoles, a little, nimble, and strong armed Saw, and sharpe. For lesse Trées, a little and sharpe Hatchet, a broad mouthed Chesell, strong and sharpe, with an handbéetle, your strong and sharpe Cléaner, with a knock, and (which is a most necessary Instrument amongst little Trées) a great hafted and sharpe Knife or Whittle. And as needfull is a Stole- Instruments for dressing.

Stole on the top of a Ladder of eight or moe rungs, with two backe feet, whereon you may safely and easefully stand to graffe, to dresse, and to gather fruit, thus formed: The feet may be fast wedged in: but the Ladder must hang lose, with two bands of iron. And thus much of dressing trees for fruit, formally to profit.

CHAP. XII.

Of Foyling.

Necessity of foiling.

THere is one thing yet very necessary for to make your Orchard both better, and more lasting: Yea, so necessary, that without it your Orchard cannot last, nor prosper long, which is neglected generally both in precepts and in practise, viz. manuring with Foile: whereby it happeth that when trees (amongst other evils) through want of fatnesse to feede them, become mossie, and in their growth are euill (or not) thriuing, it is either attributed to some wrong cause, as age (when indeed they are but young) or euill standing (stand they neuer so well) or such like, or else the cause is altogether vnknowne, and so not amended.

Trees great suckers.

Can there be deuised any way by nature, or art, sooner or soundlier to sucke out, and take away the heart and strength of earth, than by great trées? Such great bodies cannot bee sustained without great store of sap. What liuing body haue you greater than of trées? The great Sea-monsters (whereof one came a land at Teesmouth in Yorkeshire, hard by vs. 18. yards in length, and neere as much in compasse) séeme hideous, huge, strange, & monstrous, because they be indéed great: but especially, because they are seldome séene: But a trée liuing, come to his growth and age, twice that length, and of a bulke neuer so great, besides his other parts, is not admired, because he is so commonly séene. And I doubt not, but if he were well regarded from his kirneil, by succéeding ages, to his full strength, the most of them would double their measure. About fifty yeeres agoe I heard by credible and constant report, That in Brooham Parke in West-more-land, neere vnto Penrith, there lay a blowne

Great bodies.

blowne Oake, whose Trunke was so bigge, that two Horsemen being the one on the one side, and the other on the other side, they could not one see another: to which if you adde his armes, boughs, and rots, and consider of his bignesse, what would he haue béene, if preserued to the vantage. Also I read in the History of the West-Indians, out of Peter-Martyr, That sixtéene mentaking hands one with another, were not able to fathome one of those trées about. Now Nature hauing giuen to such a faculty by large and infinite rots, fawes and tangles, to draw immediatly his sustenance from our common mother the Earth (which is like in this point to all other mothers that beare) hath also ordained that the Trée ouer-loden with fruit, and wanting sap to féed all she hath brought forth, will waine all she cannot féed, like a woman bringing forth moe children at once then she hath teats. Sée you not how Trées especially, by kind being great, standing so sticke and close, that they cannot get plenty of sap, pine away all the grasse, wéeds, lesser shrubs, and trées, yea and themselues also for want of vigor of sap: So that trées growing large, sucking the soile whereon they stand, continually, and amaine, and the foyzon of the earth that féeds them decaying (for what is there that waxes continually, that shall not haue end:) must either haue supply of sucken, or else leaue thriuing and growing. Some grounds will beare Corne while they be new, and no longer, because their crust is shallow, and not very good, and lying high they scind and wash, and become barren. The ordinary Corne soiles continue not fertill, without following and foyling, and the best requires supply, euen for the little body of Corne. How then can wee thinke that any ground (how good soeuer) can sustaine bodies of such greatnesse, and such great fée ing, without great plenty of Sap arising from good earth? This is one of the chiefe causes, why so many of our Orchards in England are so euill thriuing when they come to growth, and our fruit so bad. Men are loth to bestow much ground, and desire much fruit, and will neither set their trées in sufficient compasse, nor yet féed them with manure. Therefore of necessity Orchards must be soiled.

The fittest time is, when your Trées are growne great, and haue néere hand spread your earth, wanting new earth to sustaine Time fit for foyling.

sustaine them, which if they do, they will seeke abroad for better earth, and shun that, which is barren (if they find better) as cattell euill pasturing. For nature hath taught euery creature to desire and seeke his owne good, and to auoid hurt. The best time of the yeere is at the Fall, that the Frost may bite and make it tender, and the Raine wash it into the roots. The Summer time is perillous if ye dig, because the sap stirs amaine. The best kinde of Foile is such as is fat, hot, and tender. Your earth must be but lightly opened, that the dung may goe in, and wash away; and but shallow, lest you hurt the roots: & in the spring, closely and equally made plaine againe for feare of Suckers. I could wish, that after my Trees haue fully possessed the soile of mine Orchard, that euery seuen yeeres at least, the soile were bespread with dung halfe a foot thicke at least. Puddle water out of the dunghill powred on plentifully, will not only moisten but fatten especially in June and July. If it bee thicke and fat and applied euery yeere, your Orchard shall need none other foiling. Your ground may lye so low at the Riuer side, that the flood standing some daies and nights thereon, shall saue you all this labour of foiling.

Kind of foyle.

CHAP. XIII.

Of Annoyances.

Chiefe helpe to make euery thing good, is to auoid the euills thereof. You shall neuer attaine to that good of your Orchard you loue for, vnlesse you haue a Gardner, that can discerne the diseases of your trees, & other annoiances of your Orchard, & find out the causes thereof, and know & apply fit remedies for the same. For be your ground, site, plants, and trees as you would wish, if they be walled with hurtful things, what haue you gained but your labor for your trauel? It is with an Orchard & euery tree, as with mans body. The best part of physicke for preseruation of health, is to foresee & cure diseases.

Two kinds of euils in an Orchard.

All the diseases of an Orchard are of two sorts, either internall or externall. I call those inward hurts which breed on and in particular trees.

1 Galles. 5 Barke bound.
2 Canker. 6 Barke pild.
3 Mosse. 7 Worme.
4 Weaknes in setting. 8 Deadly wounds.

Galls, Canker, Mosse, weaknesse, though they bee diuers diseases: yet (howsoeuer Authors thinke otherwise) they rise all out of the same cause.

Galles we haue described with their cause and remedy, in the 11. Chapter vnder the name of fretters. Galls.

Canker is the consumption of any part of the tree, barke and wood, which also in the same place is deciphered vnder the title of water-boughes. Canker.

Mosse is sensibly séene and knowne of all, the cause is pointed out in same Chapter, in the discourse of Timber-wood, and partly also the remedy: But for Mosse adde this, That at any time in summer (the Spring is best) when the cause is removed, with an Haircloth, immediatly after a showre of raine, rub off your Mosse, or with a péece of wood (if the Mosse abound) formed like a great knife. Mosse.

Weaknesse in the setting of your fruit shall you finde there also in the same Chapter, and his remedy. All these flow from the want of mouth in good soile, wrong planting, Chap. 7. and euill or no dressing. Weaknesse in setting.

Barke-bound (as I thinke) riseth of the same cause, and the best, and present remedy (the causes being taken away) is with your sharpe knife in the Spring, length-way to launch his barke throughout, on three or foure sides of his boale. Barke-bound.

The disease called the Worme is thus discerned: The barke will be hoald in diuers places like gall, the wood will die & dry, & you shall see easily the barke swell. It is verily to be thought, that therin is bred some worme. I haue not yet thoroughly sought it out, because I was neuer troubled therwithall: but only haue séene such trées in diuers places. I thinke it a worme rather, because I sée this disease in trées, bringing fruit of swéet taste, & the swelling shewes as much. The remedy (as I coniecture) is so Worme, Remedy
soone as you perceiue the wound, the next spring cut it out barke & all, and apply Cowes pisse & vineger presently, and so twise or thrice a weéke for a Moneths space: For I well perceiue, if you suffer it any time, it eates the tree or bough round, & so kils.

Since I first wrote this Treatise, I haue changed my mind concerning the disease called the worme, because I read in the History of the West-Indians, that their trees are not troubled with the disease called the worme or canker, which ariseth of a raw and euill concocted humor or sap, Witnesse Pliny, by reason their Country is more hot then ours, whereof I thinke the best remedy is (not disallowing the former, considering that the worme may breed by such an humor) warme standing, sound lopping and good dressing.

Bark-pilde. Back-pild you shall find with his remedy in the 11. Chapter.

Woūds. Deadly wounds are when a mans Arborist wanting skill, cuts off armes, boughs or branches an inch, or (as I see sometimes) an handfull, or halfe a foot or more from the body: These so cut cannot couer in any time with sap, and therefore they die, and dying they perish the heart, and so the tree becomes hollow, and with such a deadly wound cannot liue long.

Remedy. The remedy is, if you find him before he be perished, cut him close, as in the 11. Chapter: if he be hoald, cut him close, fill his wound, tho neuer so deepe, with morter well tempered and so close at the top his wound with a Seare-cloth doubled & nailed on, that no aire nor raine approach his wound. If he be not very old, and detaining, he will recouer, and the hole being closed, his wound within shall not hurt him for many yeeres.

Hurts on trees. Hurts on your trees are chiefely Ants, Earewigs, and Caterpillars. Of Ants and Earewigs is said Chap. 10. Let there be no swarme of Pismires neere your Trees root, no not in your Orchard, turne them ouer in a frost, and poure in water, and you kill them.

Ants, Earwigs, Caterpillars, and such like wormes. For Caterpillars, the vigilant Fruterer shall soone espy their lodging by their Web, or the decay of leaues eaten round about them. And being seene, they are easily destroyed with your hand, or rather (if your tree may spare it) take sprig and all (for the red peckled butter-flye doth ouer put them, being her sparm, among the tender sprais for better feeding, especially in drought, and tread them vnder your feet. I like nothing of smoke among my trees. Vnnaturall heates are nothing good for naturall trees. This for diseases of particular trees.

External euils. External hurts are either things naturall or artificiall. Naturall things, externally hurting Orchards:

1 Beasts

2 Beasts. 1 Deere. 2 Birds. 1 Bullfinch.
2 Goates. 2 Thrush.
3 Sheepe. 3 Blackbird.
4 Hare. 4 Crow.
5 Cony. 5 Pye.
6 Cattell.
7 Horse. &c.

The other things are,

1 Winds.
2 Cold.
3 Trees.
4 Weeds.
6 Wormes.
6 Moules.
7 Filth.
8 Poysonfull smoke.

Externall wilfull euils are these:

1 Walls.
2 Trenches.
3 Other works noisome done in or neere your Or-
4 Euill Neighbours. (chard.
5 A careleſſe Waſter.
6 An vndiſcreet, negligent or no Keeper.

See you not here an whole Army of mischiefes banded in troupes against the most fruitfull trees the earth beares? assailing your good labours. Good things haue most enemies.

A skilfull Fructerer must put to his helping hand, and disband and put them to flight. Remedy

For the first ranke of beasts, besides your out strong fence, you must haue a faire and swift Greyhound, a stone-bow, gun, and if neede require, an Apple with an hooke for a Deere, and an Hare-pipe for an Hare. Deere, &c.

Your Cheries and other Berries when they be ripe, will draw all the Black-birds, Thrushes and Haw-pies to your Orchard. The Bul-finch is a deuourer of your Fruit in the bud, I haue had whole trees shald out with them in Winter-time. Birds.

The best remedy here is a Stone-bow, a Piece, especially if you haue a Musket or Spar-hawke in Winter to make the Black-bird stope into a bush or hedge. Remedy

The Gardner must cleanse his soile of all other Trees: but fruit Other trees.

fruit trées aforesaid Chapter 2. for which it is ordained, and I would especially name Okes, Elmes, Ashes, and such other great wood, but that I doubt it should be taken as an admission of lesser trées: for I admit of nothing to grow in mine Orchard but Fruit and Flowers. If Sap can hardly be good to fede our Fruit-trées, why should we allow of any other, especially those, that will become their Pasters, and wrong them in their liuelyhood.

And although we admit without the fence of Walnuts in most plaine places, Trées middle-most, and Ashes or Okes, or Elmes vtmost, set in comely rowes equally distant with faire Allies twixt row and row to auoid the boisterous blasts of winds, and within them also others for Bées; yet we admit none of this into your Orchard-plat: other remedy then this haue we none against the nipping frosts.

Winds. Frosts.

Weeds. Weéds in a fertile soile (because the generall curse is so) till your Trées grow great, will be noysome, and deforme your allies, walkes, beds, and squares, your vnder Gardners must labour to kéepe all cleanly and handsome from them, and all other filth with a Spade, wéeding-knines, rake with iron teeth: a skrapple of Iron thus formed,

Remedy For Nettles and ground-Iuy after a showre.

When Wéeds, straw, stickes, and all other scrapings are gathered together, burne them not, but bury them vnder your cruft in any place of your Orchard, and they will dye and fatten your ground.

Wormes Moles. Wormes and Moales open the earth, and let in aire to the roots of your Trées, & deforme your squares and walkes, & féeding in the earth, being in number infinite, draw on barrennes.

Remedy Wormes may easily be destroyed. Any Summer euening when it is darke, after a showre with a Candle, you may fill bushels, but you must tread nimbly. And where you cannot come to catch them so; sift the earth with coale ashes an inch or two thicknesse, and that is a plague to them, so is sharpe grauell.

Moles will anger you, if your Gardner or some skilfull Mole-catcher ease you not, especially hauing made their fortresses among the roots of your trées: you must watch her well with a

Mole-

Mole-speare, at morne, noone, and night, when you see her vtmost hill, cast a Trench betwixt her and her home (for she hath a principall mansion to dwell and breed in about Aprill, which you may discerne by a principall hill, wherein you may catch her, if you trench it round and sure, and watch well) or whersoeuer you can discerne a single passage (for such she hath) there trench, and watch, and haue her.

Wilfull annoyances must be preuented and auoided by the loue of the Master and Fruterer, which they beare to their Orchard. Wilfull annoyances.

Iustice and liberality will put away euill neighbours or euill neighbour-hood. And then (if God blesse and giue successe to your labours) I see not what hurt your Orchard can sustaine. Remedy.

CHAP. XIIII.

Of the Age of Trees.

IT is to be considered: All this Treatise of trees tends to this end, that men may loue and plant Orchards, whereunto there cannot be a better inducement then that they know (or at least be perswaded) that all that benefit they shall reape thereby, whether of pleasure or profit, shall not be for a day or a month, or one, or many (but many hundreth) yeeres. Of good things the greatest, and most durable is alwaies the best. If therefore out of reason grounded vpon experience, it bee made (I thinke) manifest, but I am sure probable, that a fruit-tree in such a soile and site, as is described so planted and trimmed and kept, as is afore appointed and duly soiled, shall dure 1000. yeeres, why should we not take paines, and be at two or three yeeres charges (for vnder seuen yeeres will an Orchard be perfected for the first planting, and in that time be brought to fruit) to reape such a commodity, and so long lasting. The age of trees.

Let no man thinke this to be strange, but peruse and consider the reason. I haue Apple-trees standing in my little Orchard, which I haue knowne these forty yeeres, whose age before my time I cannot learne, it is beyond memory, tho I haue enquired of diuers aged men of 80. yeeres and vpwards: these trees although come into my possession very euill ordered, Gathered by reason out of experience.

red, misshapen, and one of them wounded to his heart, and that deadly (for I know it will be his death) with a wound, wherein I might haue put my fist in the heart of his bulke (now it is lesse) notwithstanding, with that small regard they haue had since, they so like, that I assure my selfe they are not come to their growth by more than 2. parts of 3. which I discerne not only by their owne growth, but also by comparing them with the bulke of other trées. And I find them short (at least) by so many parts in bignesse, although I know those other fruit trées to haue béene much hindred in their stature by euill guiding. Wherehence I gather thus.

Parts of a Trees age.

If my trées be a hundred yéeres old, and yet want two hundred of their growth before they leaue encreasing, which make thrée hundred, then we must néeds resolue, that this thrée hundred yéere are but the third part of a Trées life, because (as all things liuing besides) so Trées must haue allowed them for their encrease one third, another third for their stand, and a third part of time also for their decay. All which time of a Trée amounts to nine hundred yeares, thrée hundred for increase, three hundred for his stand, whereof we haue the tearme stature, and three hundred for his decay, and yet I thinke (for we must coniecture by comparing, because no one man liueth to see the full age of Trees) I am within the compasse of his age, supposing alwaies the foresaid meanes of preseruing his life. Consider the age of other liuing creatures. The Horse and moiled Ore wrought to an vntimely death, yet double the time of their increase. A Dog likewise increaseth three, stands three at least, and in as many (or rather moe) decayes. Euery liuing thing bestowes the least part of his age in his growth, and so

Mans age.

must it needs be with Trees. A man comes not to his full growth and strength (by common estimation) before thirty yeeres, and some slender and cleane bodies, not till forty, so long also stands his strength, and so long also must hee haue allowed by course of nature to decay. Euer supposing that he bee well kept with necessaries, and from and without straines. bruises, and all other dominering diseases. I will not say vpon true report, that Physicke holds it possible, that a cleane body kept by these 3. Doctors, Doctor Dyet, Doctor Quiet, and Doctor Merriman, may liue nére a hundred yeeres.

Neither

Neither will I heere vrge the long yeeres of Methuſhalah, and thoſe men of that time, becauſe you will ſay, Mans dayes are ſhortned ſince the flood. But what hath ſhortned them? God for mans ſinnes: but by meanes, as want of knowledge, euill gouernement, ryot, gluttony, drunkennes, and (to be ſhort) the encreaſe of the curſe, our ſinnes increaſing in an iron and wicked age.

Now if a man, whoſe body is nothing (in a manner) but tender rottennesſe, whoſe courſe of life cannot by any meanes, by counſell, reſtraint of lawes, or punishment, nor hope of praiſe, profit, or eternall glory, be kept within any bounds, who is degenerate cleane from his naturall feeding, to effeminate niceneſſe, and cloying his body with exceſſe of meat, drinke, ſléepe, &c. and to whom nothing is ſo pleaſant and ſo much deſired as the cauſes of his owne death, as idleneſſe, luſt, &c. may liue to that age: I ſee not but a tree of a ſolide ſubſtance, not dammified by heate or cold, capable of, and ſubiect to any kinde of ordering or dreſſing, that a man ſhall apply vnto him, feeding naturally, as from the beginning diſburdened of all ſuperfluities, eaſed of, and of his owne accord auoiding the cauſes that may annoy him, ſhould double the life of a man, more than twice told; and yet naturall philoſophy, and the vniuerſall conſent of all Hiſtories tell vs, that many other liuing creatures farre exceed man in the length of yeeres: As the Hart and the Rauen. Thus reporteth that famous Roterodam out of Heſiodus, and many other Hiſtoriographers. The teſtimony of Cicero in his booke De Senectute, is weighty to this purpoſe: that we muſt in poſteras ætates ſerere arbores, which can haue none other ſence: but that our fruit trees, whereof he ſpeakes, can endure for many ages.

What elſe are trees in compariſon with the earth: but as haires to the body of man? And it is certaine, without poiſoning, euill and diſtemperate dyet, and blage, or other ſuch forcible cauſe, the haires dure with the body. That they be called excrements, it is by reaſon of their ſuperfluous growth: (for cut them as often as you liſt, and they will ſtill come to their naturall length.) Not in reſpect of their ſubſtance, and nature. Haires endure long, and are an ornament and vſe alſo to the body, as trees to the earth.

So that I resolue vpon good reason, that fruit-trees well ordered, may liue and like a thousand yeeres, and beare fruit, and the longer, the more, the greater, and the better, because his vigour is proud and stronger, when his yeeres are many: You shall see old trees put their buds and blossomes both sooner and more plentifully than yong trees by much. And I sensibly perceiue my yong trees to inlarge their fruit, as they grow greater, both for number, and greatnesse. Yong Heifers bring not forth Calues so faire, neither are they so plentifull to milke, as when they become old Kine. No good Housewife will breed of a yong but an old bird-mother: It is so in all things naturally, therefore in trees.

The age of timber trees.

And if fruit-trees lack to this age, how many ages is it to be supposed, strong and huge timber trees will last? whose huge bodies require the yeeres of diuers Methushalahes, before they end their dayes, whose Sap is strong and bitter, whose Barke is hard and thicke, and their substance solid and stiffe: all which are defences of health and long life. Their strength withstands all forcible winds, their sap of that quality is not subiect to wormes and tainting. Their bark receiues seldome or neuer by casualty any wound. and not onely so, but he is free from remouals, which are the death of millions of trees, whereas the fruit tree in comparison is little, and often blowne downe, his sap sweet, easily, and soone tainted, his barke tender, and soone wounded, and himselfe vsed by man, as man vseth himselfe, that is either vnskilfully, or carelessely.

Age of trees discerned.

It is good for some purposes to regard the age of your fruit trees, which you may easily know, till they come to accomplish twenty yeeres, by his knots: Reckon from his root vp an arme, and so to his top-twig, every yeeres growth is distinguished from other by a knot, except lopping or remouing doe hinder.

Chap. XV.

Of gathering and keeping Fruit.

Generall Rule.

Although it be an easie matter, when God shal send it, to gather and keepe fruit, yet are they certaine things worthy your regard. You must gather your fruit when it is ripe, and not before, else will it wither and be tough and sowre. All fruit generally are ripe, when they beginne to fall.

fall. For Trees doe as all other bearers doe, when their yong ones are ripe, they will waine them. The Doue her Pigeons, the Cony her Rabbets, and women their children. Some fruit trees sometimes getting a taint in the setting with a frost or euill winde, will cast his fruit vntimely, but not before he leaue giuing them sap, or they leaue growing. Except frō this former rule, Cherries, Damsons, and Bullies. The Cherry is ripe when he is swelo wholly red, and sweet: Damsons and Bullies not before the first frost. Cherries, &c.

Apples are knowne to bee ripe, partly by their colour, growing towards a yellow, except the Leather-coat and some Peares and Greening. Apples.

Timely Summer fruit will be ready, some at Midsummer, most at Lammas for present vse; but generally no keeping fruit before Michael tide. Hard Winter fruit and Wardens longer. When.

Gather at the full of the Moone for keeping, gather dry, for feare of rotting. Dry stalkes.

Gather the stalkes withall: for a little wound in fruit, is deadly: but not the stumpe, that must beare the next fruit, nor leaues, for moisture putrifies.

Gather euery kinde seuerally by it selfe, for all will not keep alike, and it is hard to discerne them, when they are mingled. Seuerally.

If your trees be ouer-laden (as they will be, being ouered, as is before taught you) I like better of pulling some off (tho they be not ripe) neere the top end of the bough, then of propping by much, the rest shall be better fed. Propping puts the bough in danger, and frets it at least. Ouerladen trees.

Instruments: A long Ladder of light Firre: A steele-ladder as in the 11. Chapter. A gathering apron like a poake before you, made of purpose, or a Wallet hung on a bough, or a basket with a fine bottome, or skinne bottome, with Lathes or splinters vnder, hung in a rope to pull vp & down: bruise none, euery bruise is to fruit death: if you doe, vse them presently. An hooke to pul boughs to you is necessary, breake no boughes. Instruments. Bruises.

For keeping, lay them in a dry Loft, the longest keeping Apples first and furthest on dry straw, on heapes ten or fourteene dayes, thicke, that they may sweat. Then dry them with a soft & cleane cloth, and lay them thinne abroad. Long keeping Keeping.

fruit would bee turned once in a moneth softly: but not in nor immediatly after frost. In a soft couer well with straw, but rather with chaffe or bran: For frost doth cause tender rottennes.

CHAP. XVI. *Of Profits.*

NOw pause with your selfe, and view the end of all your labours in an Orchard: vnspeakeable pleasure, and infinit commoditie. The pleasure of an Orchard I referre to the last Chapter for the conclusion: and in this Chapter, a word or two of the profit, which thoroughly to declare is past my skill: and I count it as if a man should attempt to adde light to the Sunne with a Candle, or number the Starres. No man that hath but a meane Orchard or iudgement but knowes, that the commoditie of an Orchard is great: Neither would I speake of this, being a thing so manifest to all; but that I see, that through the carelesse lazinesse of men, it is a thing generally neglected. But let them know, that they lose hereby the chiefest good which belongs to housekeeping.

Compare the commoditie that commeth of halfe an acre of ground, set with fruit trees and hearbs, so as is prescribed, and a whole Acre (say it be two) with Corne, or the best commoditie you can wish, and the Orchard shall exceed by diuers degrees.

Cydar and Perry.

In France and some other Countries, and in England, they make great vse of Cydar and Perry, thus made: Presse euery Apple, the stalke, vpper end, and all galles away; stamp them, and straine them, and within 24. houres tunne them vp into cleane, sweet, and sound vessels, for feare of euill ayre, which they will readily take: and if you hang a poake full of Cloues, Mace, Nutmegs, Cinamon, Ginger, and pils of Lemmons in the midst of the vessell, it will make it as wholesome and pleasant as wine. The like vsage doth Perry require. These drinks are very wholesome, they coole, purge, and preuent hot Agues. But I leaue this skill to Physicians.

Fruit.

The benefit of your Fruit, Rootes and Hearbs, though it were but to eate and sell, is much.

Waters.

Waters distilled of Roses, Woodbind, Angelica, are both profitable and wonderous pleasant, and comfortable.

Saffron

Saffron and Lycoras will yeeld you much Conserues and Preserues, are ornaments to your Feasts, healthy in your sickneſſe, and a good helpe to your friend, and to your purſe. Conſerues.

He that will not be moued with ſuch vnſpeakable profits, is well worthy to want, when others abound in plenty of good things.

CHAP. XVII. *Ornaments.*

METhinks hitherto we haue but a bare Orchard for fruit, and but halfe good, ſo long as it wants thoſe comely Ornaments, that ſhould giue beauty to all our labours, and make much for the honeſt delight of the owner and his friends.

For it is not to be doubted: but as God hath giuen man things profitable, ſo hath hee allowed him honeſt comfort, delight, and recreation in all the workes of his hands. Nay, all his labours vnder the Sunne without this are troubles, and vexation of minde: For what is greedy gaine, without delight, but moyling, and turmoyling in ſlauery? But comfortable delight, with content, is the good of euery thing, and the patterne of heauen. A morſell of bread with comfort, is better by much than a fat Ore with vnquietneſſe. And who can deny, but the principall end of an Orchard, is the honeſt delight of one wearied with the workes of his lawfull calling? The very workes of, and in an Orchard & Garden, are better than the eaſe and reſt of and from other labours. When God had made man after his owne Image, in a perfect ſtate, and would haue him to repreſent himſelfe in authority, tranquillitie, & pleaſure vpon the earth, he placed him in Paradiſe. What was Paradiſe? but a Garden and Orchard of trées and hearbs, full of all pleaſure? & nothing there but delights. The gods of the earth, reſembling the great God of heauen in authoritie, Maieſtie, and abundance of all things, wherein is their moſt delight? And whither doe they withdraw thémſelues from the troubleſome affayres of their eſtate, being tyred with the hearing and iudging of litigious Controuerſies? choked (as it were) with the cloſe ayres of their ſumptuous buildings, their ſtomacks cloyed with varietie of Banquets, their eares filled & ouerburthened with tedious diſcourſings? whither

Delight the chiefe end of Orchards.

An Orchard delightſome.

An Orchard is Paradiſe.

Cauſes of wearieſome-neſſe.

Orchard is the remedy.

whither? but into their Orchards? made and prepared, dressed and destinated for that purpose, to renue and refresh their sences, and to call home their ouer-wearied spirits. Nay, it is (no doubt) a comfort to them, to set open their Cazements into a most delicate Garden and Orchard, wherby they may not onely see that, wherein they are so much delighted, but also to giue fresh, sweet, and pleasant ayre to their Galleries and Chambers.

All delight in Orchards.

And looke, what these men doe by reason of their greatnesse and abilitie, prouoked with delight, the same doubtlesse would euery of vs doe, if power were answerable to our desires, whereby we shew manifestly, that of al other delights on earth, they that are taken by Orchards, are most excellent, and most agreeing with nature.

This delights all the sences.

For whereas euery other pleasure commonly filles some one of our sences, and that onely, with delight, this makes all our sences swimme in pleasure, and that with infinit variety, ioyned with no lesse commodity.

Delighteth old age.

That famous Philosopher, & matchlesse Orator, M. T. C. prescribeth nothing more fit, to take away the tediousnesse and heauy load of three or foure score yeares, than the pleasure of an Orchard.

Causes of delight in an Orchard.

What can your eye desire to see, your eares to heare, your mouth to taste, or your nose to smell, that is not to be had in an Orchard, with abundance and variety? What more delightsome than an infinite varietie of sweet smelling flowers? decking with sundry coloures, the greene mantle of the Earth, the vniuersall Mother of vs all, so by them bespotted, so dyed, that all the world cannot sample them, and wherein it is more fit to admire the Dyer, than imitate his workemanship. Colouring not onely the earth, but decking the ayre, and sweetning euery breath and spirit.

Flowers.

The Rose red, damaske, veluet, and double double prouince Rose, the sweet muske Rose double and single, the double and single white Rose. The faire and sweet senting Woodbinde, double and single, and double double. Purple Cowslips, and double Cowslips, and double double Cowslips. Primerose double and single. The Violet nothing behinde the best, for smelling sweetly. And 1000. more will prouoke your content.

And

And all these, by the skill of your Gardiner, so comely, and orderly placed in your Borders and Squares, and so intermingled, that none looking thereon, cannot but wonder, to see, what Nature corrected by Art can doe. Borders and squares.

When you behold in diuers corners of your Orchard Mounts of stone, or wood curiously wrought within and without, or of earth couered with fruit-trees: Kentish Cherry, Damsons, plummes, &c. With staires of precious workmanship. And in some corner (or mo) a true Dyall or Clocke, and some Anticke workes, & especially siluer-sounding Musique, mixt Instruments and voices, gracing all the rest: How will you be rapt with delight? Mounts. Whence you may shoote a Bucke. Dyall. Musique.

Large Walks, broad & long, close and open, like the Tempe groues in Thessalie, raised with grauell and sand, hauing seats and banks of Camomile, all this delights the minde, & brings health to the body. Walkes. Seats.

View now with delight the workes of your owne hands, your fruit trees of all sorts, loaden with sweet blossomes, and fruit of all tasts, operations, and colours: your trees standing in comely order which way soeuer you looke. Order of trees.

Your borders on euery side hanging and drooping with Feberries, Raspberries, Barberies, Currens, and the rootes of your trees powdred with Strawberries, red, white, and greene, what a pleasure is this? Your Gardiner can frame your lesser wood to the shape of men armed in the field, ready to giue battell: or swift running Greyhounds: or of well sented and true running Hounds, to chase the Deere, or hunt the Hare. This kinde of hunting shall not waste your corne, nor much your coyne. Shape of men and beasts.

Mazes well framed a mans height, may perhaps make your friend wander in gathering of berries, till hee cannot recouer himselfe without your helpe. Mazes.

To haue occasion to exercise within your Orchard: it shall be a pleasure to haue a Bowling-Alley, or rather (which is more manly, and more healthfull) a paire of Buts, to stretch your armes. Bowle Ally. Buts.

Rosemary and sweet Eglantine are seemely ornaments about a Doore or Window, so is Woodbinde. Hearbs.

Looke Chap. 5, and you shall see the forme of a Conduit. Conduit.

vnit. If there were two or more, it were not amisse.

And in mine opinion, I could highly commend your Orchard, if either thorow it, or hard by it there should runne a pleasant Riuer with siluer streames: you might sit in your Mount, and angle a peckled Trout, or sleighti Eele, or some other Fish. Or Moats, whereon you might row with a Boat, and fish with Nets.

Riuer.

Moats.

Store of Bees in a dry and warme Bee-house, comely made of Firboords, to sing, and sit, and feed vpon your flowers and sprouts, make a pleasant noyse and sight. For cleanely and innocent Bees, of all other things, loue and become, and thriue in an Orchard. If they thriue (as they must needs, if your Gardiner be skilfull, & loue them: for they loue their friends, and hate none but their enemies) they will, besides the pleasure, yeeld great profit, to pay him his wages. Yea, the increase of twenty Stocks or Steoles, with other fees, will keep your Orchard. You need not doubt their stings, for they hurt not whom they know, and they know their keeper and acquaintance. If you like not to come amongst them, you need not doubt them: for but neere their store, and in their owne defence, they will not fight, and in that case onely (and who can blame them?) they are manly, and fight desperately. Some (as that Honourable Lady at Hacknes, whose name doth much grace mine Orchard) vse to make seats for them in the Stone wall of their Orchard, or Garden, which is good, but wood is better.

Bees.

A Vine ouer-shadowing a seat, is very comely, though her Grapes with vs ripe slowly.

Vine.

One chiefe grace that adorns an Orchard, I cannot let slip: A brood of Nightingales, who with their seuerall notes and tunes, with a strong delightsome voice, but of a weake body, will beare you company night and day. She loues (and liues in) hots of woods in her heart. She will helpe you to cleanse your trees of Caterpillers, and all noisome wormes and flyes. The gentle Robin-red-brest will helpe her, and in Winter in the coldest stormes will keepe a part. Neither will the silly Wren be behinde in Summer, with her distinct whistle (like a sweet Recorder) to cheere your spirits.

Birds.

Nightingale.

Robin-red-breast.

Wren.

The Black-bird and Threstle (for I take it the Thrush sings not,

Black-bird.

Thrush.

not, but deuoures) sing loudly in a May morning, and delights the eare much (and you need not want their company, if you haue ripe Cherries or Berries, and would as gladly as the rest doe you pleasure:) But I had rather want their company than my fruit.

What shall I say? 1000. of delights are in an Orchard: and sooner shall I be weary, then I can reckon the least part of that pleasure, which one that hath and loues an Orchard, may finde therein.

What is there of all these few that I haue reckoned, which doth not please the eye, the eare, the smell, and tacke? And by these sences as Organes, Pipes, and Windowes, these delights are carried to refresh the gentle, generous, and noble minde.

To conclude, what ioy may you haue, that you liuing to such an age, shall see the blessings of God on your labours while you liue, and leaue behinde you to your heires or successors (for God will make heires) such a worke, that many ages after your death, shall record your loue to your Country? And the rather, when you consider (Chap. 14.) to what length of time your worke is like to last. Your owne labour.

FINIS.

I

THE COVNTRY HOVSEWIFES GARDEN.

Containing Rules for Hearbs and Seeds of common vse, with their times and seasons, when to set and sow them.

TOGETHER

With the Husbandry of Bees, published with secrets very necessary for euery Housewife.

As also diuers new Knots for Gardens.

The Contents see at large in the last Page.

GEN. 2. 29.

I haue giuen vnto you euery Herbe, and euery tree, that shall be to you for meate.

London printed for *Roger Iackson.* 1623.

THE COVNTRY HOVSWIFES GARDEN.

CHAP. I.

The Soyle.

THe soyle of an Orchard & Garden, differ only in these three points: First, the Gardens soyle would be somewhat dryer, because hearbs beeing more tender than trees, can neither abide moisture nor drought, in such excessiue measure, as trees; and therefore hauing a dryer soyle, y remedy is easie against drought, if need be: water soundly, which may bee done with small labour, the compasse of a garden being nothing so great, as of an Orchard, and this is the cause (if they know it) that Gardiners raise their squares: but if moysture trouble you, I see no remedy without a generall danger, except in Hops, which delight much in a low and sappy earth. Dry. Hops.

Secondly, the soyle of a Garden would be plaine and leuell, at least euery square (for we suppose the square to be the fittest forme) the reason: the earth of a Garden wanting such helpes, as should stay the water, which an Orchard hath, and the roots of hearbs being short, and not able to fetch their liquor from the bottome, are more annoyed by drought, and the Soyle being mellow and loose, is soone either washt away, or sends out his heart by too much drenching and washing. Plaine.

Thirdly, if a garden soyle be not cleere of weeds, and namely,

of grasse, the hearbs shall neuer thriue: for how should good hearbs prosper, when euill weeds waxe so fast: considering good hearbs are tender in respect of euill weedes: these being strengthened by nature, and the other by Art? Gardens haue small place in comparison, and therefore may the more easily be followed, at the least one halfe yeere before, and the better dressed after it is framed. And you shall finde that cleane keeping doth not onely auoid danger of gathering weeds, but also is a speciall ornament, and leaues more plentifull sap for your tender hearbs.

CHAP. II.

Of the Site.

I Cannot see in any sort, how the Site of the one should not be good, and fit for the other: The ends of both being one, good, wholesome, and much fruit ioyned with delight, vnlesse trees be more able to abide the nipping frosts than tender hearbs: but I am sure, the flowers of trees are as soone perished with cold, as any hearbe except Pompions, and Melons.

CHAP. III.

Of the forme.

LEt that which is said in the Orchards forme, suffice for a Garden in generall: but for speciall formes in squares, they are as many, as there are deuices in Gardiners braines. Neither is the wit and art of a skilfull Gardiner *in this point* not to be commended, *that can worke more variety* for breeding of more delightsome choise, and of all those things, where the owner is able and desirous to be satisfied. The number of formes, Mazes and Knots is so great, and men are so diuersly delighted, that I leaue euery Housewife to her selfe, especially seeing to set downe many, had been but to fill much paper; yet lest I depriue her of all delight and direction, let her view these few, choise, new formes, and note this generally, that all plots are square, and al are bordred about with Privit, Raisins, Feaberries, Roses, Thorne, Rosemarie, Wal-flowers, Hysop, Sage, or such like.

CHAP.

The ground plot for Knots.

Cinkfoyle.

Flower-deluce.

The Tre-foyle.

The Fret.

Lozengers.

Crosse-bowe.

Diamond.

Quall.

Maze.

Chap. IIII. Of the Quantitie.

A Garden requireth not so large a scope of ground as an Orchard, both in regard of the much Weeding, dressing and remouing, and also the paines in a Garden is not so well repayed home, as in an Orchard. It is to be granted, that the Kitchin garden both yeeld rich gaines by Berries, Rootes, Cabbages, &c. yet these are no way comparable to the fruits of a rich Orchard: but notwithstanding I am of opinion, that it were better for England, that we had more Orchards and Gardens, and more large. And therefore we leaue the quantitie to euery mans ability and will.

Chap. V. Of Fence.

Seeing we allow Gardens in Orchard plots, and the benefit of a Garden is much, they both require a strong & shrowding fence. Therefore leaning this, let vs come to the hearbs themselues, which must be the fruit of all these labours.

Chap. VI. Of two Gardens.

Hearbes are of two sorts, and therefore it is meete (they requiring diuers manners of Husbandry) that wee haue two Gardens: A Garden for flowres, & a Kitchen Garden: or a Summer Garden, and a Winter Garden: not that wee meane so perfect a distinction, that ỹ Garden for flowres should or can be without hearbs good for the Kitchen, or the Kitchen Garden should want flowres, nor on the contrarie: but for the most part they would be seuered: first, because your Garden flowres shall suffer some disgrace, if among them you intermingle Onions, Parsnips, &c. Secondly, your Garden that is durable, must be of one forme: but that, which is for your Kitchens vse, must yeeld daily rootes, or other hearbes, and suffer deformitie. Thirdly, the hearbes of both will not be both alike redy, at one time, eyther for gathering, or remouing. First therefore

Of the Summer Garden.

These hearbes & flowres are comely & durable for squares and knots, and all to be set at Michael-tide, or somewhat before,

before, that they may be settled in, and taken with the ground, before Winter, though they may bee set, especially sowne in the Spring.

Roses of all sorts (spoken of in the Orchard,) must bee set. Some vse to set slippes and twine them, which sometimes, but seldome thriue all.

Rosemary, Lauender, Bee-flowers, Isop, Sage, Time, Cowslips, Pyony, Dasies, Cloue Gilliflowers, Pinkes, Sothernwood, Lillies, of all which hereafter.

Of the Kitchen Garden.

THough your Garden for flowers doth in a sort peculiarly challenge to it selfe a profit, and exquisite forme to the eyes, yet you may not altogether neglect this, where your hearbs for the pot doe grow. And therefore, some here make comely borders with ỹ Hearbs aforesaid. The rather because aboundance of Roses and Lauender yeeld much profite, and comfort to the sences: Rosewater and Lauender, the one cordiall (as also the Violets, Burrage, & Buglas) the other reuiuing the spirits by the sence of smelling: both most durable for smell, both in flowres and water: you need not here raise your beds, as in the other Garden, because Summer towards, will not let too much wet annoy you. And these hearbs require more moisture: yet must you haue your beds diuided, that you may go betwixt to weede, & somewhat forme would be expected: To which it auaileth, that you place your hearbs of biggest growth, by walles, or in borders, as Fenell, &c. and the lowest in the middest, as Saffron, Strawberries, Onions, &c.

Chap. VII.

Diuision of hearbs.

GArden hearbs are innumerable, yet these are common and sufficient for our Country Housewiues.

Hearbs of greatest growth.

Fenell, Angelica, Tansie, Hollyhock, Louage, Elly Cãpane, French Mallowes, Lyllies, French Poppie, Endiue, Succory, and Clarie.

Hearbs of middle growth.

Burrage. Buglas, Parsley, sweet Sicillye, Flower deluce, Stocke Gillyflowers, Wall-flowers, Annisseeds, Coriander, Feather-fewell, Marigolds, Oculus Christi, Langdebeefe, Alexanders, Carduus Benedictus.

Hearbs of smallest growth.

Pansye, or Harts ease, Coast Margeram, Sauery, Strawberies, Saffron, Lycoras, Daffadowndillies, Leekes, Chiues, Chibals, Skerets, Onions, Batchelors buttons, Daises, Penyryall.

Hitherto I haue onely reckoned vp, & put in this rank, some hearbs. Their husbandry follow each in an Alphabeticall order, the better to be found.

Chap. VIII.

Husbandry of Hearbs.

Alexanders are to be renued as Angelica. It is a timely Pot-hearbe.

Angelica is renued with his seede, whereof he beareth plentie the second yeere, and so dyeth. You may remoue the roots the first yeere. The leaues distilled, yeeld water soueraigne to expell paine from the stomacke. The roote dryed taken in the fall, stoppeth the poares against infections.

Annyseedes make their growth, and beareth seedes the first yeere, & dyeth as Coriander: it is good for opening the pipes, and it is vsed in Comfits.

Artichoakes are renued by diuiding the roots into sets, in March, euery third or fourth yeere. They require a seuerall plage, and therefore a seuerall whole plot by themselues, especially considering they are plentifull of fruite much desired.

Burrage & Buglas, two cordials, renue themselues by seede yeerely, which is hard to be gathered: they are exceeding good Pot-hearbs, good for Bees, and most comfortable for the heart and stomack, as Quinches and Wardens.

Camomile, set rootes in bankes and walkes. It is sweet smelling, qualifying headache.

Cabbages require great rome, they seede the second yeere: sowe them in Februarie, remoue them when the plants are an handfull long, set deepe and wet. Looke well in drought for the white

white Caterpillers worme, she spannes vnder the leafe closely: for euery liuing Creature doth seek food and quiet shelter, and growing quicke, they draw to, and eate the heart: you may find them in a rainie or dewie morning. It is a good Pothearbe, and of this Pearb called Cole, our Country Housewiues giue their pottage their name, and call them Caell.

Carduus Benedictus, or blessed thistle, seeds and dyes the first yeere, the excellent vertue thereof I referre to Herbals: for we are Gardiners, not Physicians.

Carrets are sowne late in Aprill or May, as Turneps, else they seede the first yeere, and then their roots are naught: the second yeere they dye, their rootes grow great, and require large roome.

Chibals or Chiues haue their rootes parted, as Garlick, Lillies, &c. and so are they set euery third or fourth yeere: a good pot-hearbe opening, but euill for the eyes.

Clarie is sowne, it seeds the second yeere, and dyes. It is somwhat harsh in taste, a little in pottage is good, it strengtheneth the reines.

Coast, Rootes parted make sets in March: it beares the second yeere: it is vsed in Ale in May.

Coriander is for shage and vse, much like Anniseeds.

Daffadowndillies haue their rootes parted, and set once in three or foure yeere, or longer time. They flower timely, and after Midsummer, are scarcely seene. They are more for ornament, than vse, so are Daisies.

Daisye rootes parted and set, as Flower-deluce and Camomile, when you see them grow too thicke or decay. They be good to keepe vp, and strengthen the edges of your borders, as Pinkes, they be red, white, mixt.

Ellycampane root is long lasting, as is the Louage, it seeds yeerely, you may diuide the root, and set the root, taken in Winter it is good (being dryed, powdered and drunke) to kil ticches.

Endiue and Succory are much like in nature, shape, and vse they renue themselues by seed, as Fennell, and many other hearbs. You may remoue them before they put forth Shankes. a good Pothearbe.

Fennell is renued, either by the seeds (which it beareth the second

second yeere, and so yeerely in great abundance) sowne in the fall or Spring, or by diuiding one root into many Sets, as Artichoke, it is long of growth and life. You may remoue the root vnthankt. It is exceeding good for the eyes, distilled, or any otherwise taken: it is vsed in dressing Hiues for swarmes, a very good Potherbe, or for Sallets.

Fetherfewle shakes seed. Good against a shaking Feuer, taken in a posset drinke fasting.

Flower-deluce, long lasting. Diuide his roots, and set: the rootes dryed haue a sweet smel.

Garlicke may be set an handfull distance, two inches deepe, in the edge of your beds. Part the heads into seuerall cloues, *and euery cloue set in the hinder end of February, will increase* to a great head before September: good for opening, euill for eyes: when the blade is long, fall two and two together, the heads will be bigger.

Hollyhocke riseth high, seedeth and dyeth: the chiefe vse I know is ornament.

Isop is reasonable long lasting: young rootes are good to set, slips better. A good Potherbe.

Iuly-flowers, commonly called Gilly-flowers, or Cloue-Iuly-flowers (I call them so, because they flowre in July) they haue the name of Cloues, of their sent. I may well call them the King of Flowres (except the Rose) & the best sort of them are called Queene-Iuly-flowres. I haue of them nine or ten seuerall colours, and diuers of them as bigge as Roses: of all flowres (saue the Damaske Rose) they are the most pleasant to sight and smell: they last not past three or foure yeeres vnremoued. Take the slips (without thankes) and set any time, saue in extreme frost, but especially at Michael tide. Their vse is much in ornament, and comforting the spirits, by the sence of smelling.

Iuly-flowres of the Wall, or Wall Iuly-flowres, Wall-flowres, or Bee-flowres, or Winter Iuly-flowres, because growing in walles, euen in Winter, and good for Bees, will grow euen in stone walles, they will seeme dead in Summer, and yet reuiue in Winter. They yeeld seed plentifully, which you may sow at any time, or in any broken earth, especially on the top of a mudde wall, but moyst, you may set the root before

it

it be branch't, euery slip that is not flowr'd, will take roote, or crop him in Summer, and he will flower in Winter: but his winter seed is vntimely. This and Palmes are exceeding good, and timely for Bees.

Leekes yeeld seed the second yeere, vnremoued and die, vnlesse you remoue them, vsuall to eate with salt and bread, as Onyons alwayes greene, good Pothearbe, euill for the eyes.

Lauender Spike would be remoued within seuen yeeres, or eight at the most, Slips twined as Isop and Sage, would take best at Michael tyde. This flower is good for Bees, most comfortable for smelling, except Roses: and kept dry, is as strong after a yeere, as when it is gathered. *The water of this is comfortable.*

White Lauender would be remoued sooner.

Lettice yeelds seed the first yeere, and dyes: sow betime, and if you would haue them Cabbage for Sallets, remoue them as you doe Cabbage. They are vsuall in Sallets, and the pot.

Lillies white and red, remoued once in three or foure yeares their rootes yeeld many Sets, like the Garlicke. Michael tide is the best: they grow high, after they get roote: these rootes are good to breake a Byle, as are Mallowes and Horrell.

Mallowes French, or gagged, the first or second yeere, seed plentifully: sow in March, or before, they are good for the housewifes pot, or to breake a bunch.

Marigolds most commonly come of seed, you may remoue the Plants, when they be two inches long. The double Marigold, being as bigge as a little Rose, is good for shew. They are a good Pothearbe.

Oculus Christi, or Christs eye, seeds and dyes the first or second yeere: you may remoue the yong Plants, but seed is better: one of these seeds put into the eye, within three or foure houres will gather a thicke skinne, cleere the eye, and bolt it selfe forth without hurt to the eye. A good Pot hearbe.

Onyons are sowne in February, they are gathered at Michael tide, and all the Summer long, for Sallets; as also yong Parsly, Sage, Chibals, Lettice, sweet Sicilly, Fennell, &c. good alone, or with meate as Mutton, &c. for sauce, especially for the pot.

Parsly sow the first yeere, and vse the next yeere: it seedes

plentifully, an hearbe of much vse, as sweet Sicily is. The seed and roots are good against the Stone.

Parsneps require an whole plot, they be plentifull and common: sow them in February, the Kings (that is in the middle) seed broadest and reddest. Parsneps are sustenance for a strong stomake, not good for euill eyes: When they couer the earth in a drought, to tread the tops, make the rootes bigger.

Peny-royall, or Pudding Grasse, creepes along the ground, like ground Iuie. It talks long, like Daisies, because it puts and spreads dayly new rootes. Diuide, and remoue the rootes, it hath a pleasant taste and smell, good for the pot, or parkt meate, or Haggas Pudding.

Pumpions: Set seeds with your finger, a finger deepe, late in March, and so soon as they appeare, euery night if you doubt frost, couer them, and water them continually out of a water-pot: they be very tender, their fruit is great and waterish.

French Poppy beareth a faire flower, and the Seed will make you sleepe.

Raddish is sauce for cloyed stomacks, as Capers, Olives, and Cucumbers, eate the seedes all Summer long here and there, and you shall haue them alwaies yong and fresh.

Rosemary, the grace of Hearbs in England, in other Countries common. To set slips immediately after Lammas, is the surest way. Seede sowne may proue well, so they be sowne in hot weather, somewhat moist, and good earth: for the Hearbe, though great, is nesh and tender (as I take it) brought from hote Countries to vs in the cold North: set thinne. It becomes a Window well. The vse is much in meats, more in Physick, most for Bees.

Rue, or Hearbe of Grace, continually greene, the slips are set. It talks long as Rosemary, Sothernwood, &c. too strong for mine Housewifes pot, vnlesse she will braue Ale therewith, against the Plague: let him not seede, if you will haue him last.

Saffron, euery third yeere his rootes would be remoued at Mid-summer: for when all other hearbs grow most, it dyeth. It floweth at Michael tide, and groweth all Winter: keepe his flowers from birds in the morning, and gather the yellow (for they shape much like Lillies) dry, and after dry them: they

they be precious, expelling diseases from the heart & Stomacke.

Sauery seeds and dyes the first yeere, good for my Huswifes pot and pye.

Sage: set slips in May, and they grow aye: Let it not seed, it will last the longer. The vse is much and common. The Monkish Prouerbe is tritum:

Cur moritur homo, cum saluia crescit in horto?

Skerots, the roots are set when they be parted, as Pyonie, and Flower-deluce at Michael-tide: the root is but small and very sweet. I know none other spectall vse but the Table.

Sweet Sicily, long lasting, pleasantly tasting, either the seed sowne, or the root parted, and removed, makes increase, it is of like vse with Parsly.

Strawberries long lasting, set rootes at Michael-tide, or the spring, they be red, white and greene, and ripe, when they bee great and soft, some by Mid-summer with vs. The vse is: they will coole my Housewife well, if they bee put in Wine or Creame with Sugar.

Time, both seeds, slips and rootes are good. If it seed not, it will last three or foure yeeres or more, it smelleth comfortably. It hath much vse: namely, in al cold meats, it is good for Bees.

Turnep is sowne. In the second yeere they beare plenty of seede: they require the same time of sowing that Carrets doe: they are sick of the same disease that Cabbages be. The roote increaseth much, it is most wholesome, if it be sowne in a good and well tempered earth: Soueraigne for eyes and Bees.

I reckon these hearbs onely, because I teach my Countrey Housewife, not skilfull Artists, and it should be an endlesse labour, and would make the matter tedious to reckon vp, Landi-beefe, Stocke-July-flowers, Charuall, Valerian, Go-to-bed-at-noone, Piony, Licoras, Tansie, Garden-mints, Germander, Centaurie, and a thousand such physicke Hearbs. Let her first grow cunning in this, and then she may inlarge her Garden, as her skill and abilitie increaseth. And to helpe her the more, I haue set her downe these obseruations.

Chap. IX.

Generall Rules in Gardening.

IN the South parts Gardening may be more timely, & more safely done, than with vs in Yorkeshire, because our ayre is not so fauourable, nor our ground so good.

2 Secondly most seeds shakt, by turning the good earth, are renued, their mother the earth keeping them in her bowels, till the Sunne their Father can reach them with his heat.

3 In setting hearbs, leaue no top more then an handfull aboue the ground, nor more than a foot vnder the earth.

4 Twine the rootes of those slippes you set, if they will abide it. Gilly-flowers are too tender.

5 Set moist, and sowe dry.

6 Set slips without shankes at any time, except at Midsummer, and in frosts.

7 Seeding spoiles the most rootes, as drawing the heart and sap from the root.

8 Gather for the pot and medicines, hearbs tender and greene, the sap being in the top, but in winter the root is best.

9 All the hearbs in the Garden for flowers, would once in seuen yeeres be renued, or soundly watred with puddle water, except Rosemarie.

10 In all your Gardens and Orchards, bankes and seates of Camomile, Peny-royall, Daisies and Violets, are seemely and comfortable.

11 These require whole plots: Artichokes, Cabbages, Turneps, Parsneps, Onyons, Carrets, and (if you will) Saffron, and Scerrits.

12 Gather all your seeds dead, ripe, and dry.

13 Lay no dung to the rootes of your hearbs, as vsually they doe: for dung not melted is too hot, euen for trees.

14 Thin setting and sowing (so the rootes stand not past a foot distance) is profitable, for the hearbs will like the better. Greater hearbs would haue more distance.

15 Set and sow hearbs in their time of growth (except at Mid-

Midsummer, for then they are too too tender) but trees in their time of rest.

16 A good Housewife may, and will gather store of hearbs for the pot, about Lammas, and dry them, and powne them, and in winter they will make good service.

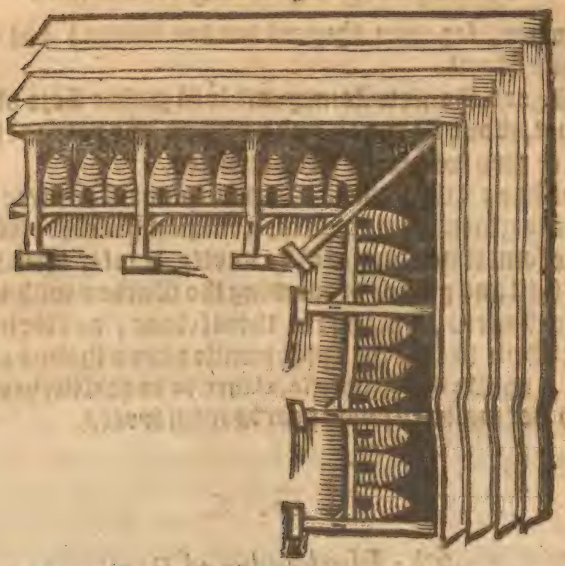
Thus haue I lined out a Garden to our Countrey Housewiues, and giuen them rules for common hearbs. If any of them (as sometimes they are) be knotty, I refer them to chap. 3. The skill and paines of weeding the Garden with weeding knives of fingers, I referre to them selues, and their maids, willing them to take the opportunitie after a showre of raine: withall I aduise the Mistresse, either to be present her selfe, or to teach her maids to know hearbs from weeds. Weeding. A good note.

Chap. X.

The Husbandry of Bees.

There remaineth one necessarie thing to bee prescribed, which in mine opinion makes as much for ornament as either Flowers, or for me, or cleanlinesse, and I am sure as commodious as any of, or all the rest: which is Bees, well ordered. And I will not account her any of my good Housewiues, that wanteth either Bees or skilfulnesse about them. And though I know some haue written well and truely, and others more plentifully vpon this Theame: yet somewhat haue I learned by experience (being a Bee-master my selfe) which hitherto I cannot finde pat into writing, for which I thinke our Housewifes will count themselues beholding vnto me.

The first thing that a Gardiner about Bees must be carefull for, is an house not stakes and stones abroad, Sub dio: for stakes rot and reele, raine and weather eate your hiues, and couers, and cold most of all is hurtfull for your Bees. Therefore you must haue an house made along, a sure dry wall in your Garden, neere, or in your Orchard: for Bees loue Flowers and wood with their hearts. Beehor



This is the forme, a frame standing on posts with a Flowre (if you would haue it hold more Hiues, two floores boorded) laid on Bearers, and backe posts, couered ouer with boords, slate-wise. Let the floores be without holes or clifts, lest in casting time, the Bees lye out, and loyter. And though your Hiues stand within an hand-breadth the one of another: yet will Bees know their owne home. In this frame may your Bees stand dry and warme, especially if you make doores like dores of windowes to shrowd them in Winter, as in an house: prouided you leaue the Hiues mouthes open. I my selfe haue deuised such an house, and I finde that it keepes and strengthens my Bees much, and my Hiues will last fiue to one.

Hiues. M. Markam commends Hiues of wood. I discommend them not: but straw Hiues are in vse with vs, and I thinke with all the world, which I commend for nimblenes, closenesse, warmenesse and dritnesse. Bees loue no externall motions of dawbing or such like. Sometimes occasion shall bee offered to lift and turne Hiues, as shall appeare hereafter. One light entire hiue of straw in that case is better, than one that is dawbed, weighty and cumbersome. I wish euery hiue, for a keeping swarme, to hold three pecks at least in measure. For too little Hiues pro-

cure

cure Bees, in casting time, either to lye out, and loyter, or else to cast before they bee ripe and strong, and so make weake swarmes and untimely: Whereas if they haue roome sufficient, they ripen timely, and casting seasonably, are strong, and fit for labour presently. Neither would the hiue be too too great, for then they loyter, and waste meat and time.

Your Bees delight in wood, for feeding, especially for casting: therefore want not an Orchard. A Mayes swarme is worth a Mares Foale: if they want wood, they be in danger of flying away. Any time before Midsummer is good, for casting and timely before Iuly is not euill. I much like M. Markams opinion for hiuing a swarme in combes of a dead or forsaken hiue, *so they be fresh and cleanly. To thinke that* a swarme of your owne, or others, will of itself come into such an hiue, is a meere conceit, Experto crede Roberto. His smearing with honey, is to no purpose, for the other Bees will eate it vp. If your swarme knit in the top of a tree, as they will, if the winde beate them not to fall downe: let the staple or ladder described in the Orchard, doe you seruice. Hiuing of Bees.

The lesse your Spelkes are, the lesse is the waste of your honey, and the more easily will they draw, when you take your Bees. Foure Spelkes athwart, and one top Spelke are sufficient. The Bees will fasten their Combes to the Hiue. A little honey is good: but if you want, Fennell will serue to rub your Hiue withall. The Hiue being dryed and ready spelkt, rubd and the hole made for their passage (I vse no hole in the Hiue, but a piece of wood boar'd, to saue the hiue and keep out Mice) shake in your Bees, or the most of them (for all commonly you cannot get) the remainder will follow. Many vse smoke, Pettles, &c. which I vtterly dislike: for Bees loue not to bee molested. Ringing in time of casting is a meere fancie, violent handling of them is simply euill, because Bees of all other creatures, loue cleanlinesse and peace. Therefore handle them leasurely and quietly, and their Keeper whom they know, may doe with them, what he will, without hurt: Being hiued at night, bring them to their seat. Set your Hiues all of one yeare together. Spelkes.

Signes of breeding, if they be strong.

1. They will auoid dead yong Bees and Droanes.

2. They

2 They will sweat in the morning, till it runne from them; alwaies when they be strong.

Signes of casting.

1 They will fye Droanes, by reason of heat.

2 The yong swarme will once or twice in some faire season, come forth muttering, as though they would cast, to prove themselues, and goe in againe.

3 The night before they cast, if you lay your eare to the Hiues mouth, you shall heare two or three, but especially one aboue the rest, cry, Up, up, up; or, Tout, tout, tout, like a trumpet, sounding the alarum to the battell.

Much descanting there is, of, and about the Master-bee, and their degrees, orders, and gouernment: but the truth in this point is rather imagined, then demonstrated. There are some coniectures of it, viz. we see in the Combes diuers greater houses than the rest, and we heare commonly the night before they cast, sometimes one Bee, sometimes two, or more Bees, giue a lowd and seuerall sound from the rest, and sometimes Bees of greater bodies than the common sort: but what of all this? I leane not on coniectures, but loue to set downe that I know to be true, and leaue these things to them that loue to diuine. Keepe none weake, for it is hazard, oftentimes with losse: Feeding will not helpe them: for being weake, they cannot come downe to meat, or if they come downe, they dye, because Bees weake cannot abide cold. If none of these, yet will the other Bees being strong, smell the honey, and come and spoile, and kill them. Some helpe is in casting time, to put two weake swarmes together, or as M. Markam well saith: Let them not cast late, by casting them with wood or stone: but with imps (say I.) An impe is three or foure wreathes, wrought as the hiue, the same compasse, to raise the hiue withall: but by experience in tryall, I haue found out a better way by Clustering, for late or weake swarmes hitherto not found out of any that I know. That is this: After casting time, if I haue any stocke proud, and hindered from timely casting, with former Winters pouertie, or euill weather in casting time, with two handles & crookes, fitted for the purpose, I turne vp that stock so pestred with Bees, and set it on the crowne, vpon which so turned with the mouth vpward, I place another empty

Catching.

Clustering.

hiue

hiue well dreſt, and ſpelkt, into which without any labour, the Swarme that would not depart, and caſt, will preſently aſcend, becauſe the old Bees haue this qualitie (as all other breeding creatures haue) to expell the young, when they haue brought them vp. There will the ſwarme build as kindely, as if they had of themſelues been caſt. But bee ſure you lay betwixt the hiues ſome ſtraight and cleanely ſticke or ſticks, or rather a boord with holes, to keepe them aſunder: otherwiſe they will ioyne their workes together ſo faſt, that they cannot be parted. If you ſo keepe them aſunder at Michael-tide, if you like the weight of your ſwarme (for the goodneſſe of ſwarmes is tried by weight) ſo catched, you may ſet it by for a ſtocke to keepe. *Take heed in any caſe the combes be not broken, for then the* other Bees will ſmell the honey, and ſpoyle them. This haue I tryed to be very profitable for the ſaning of Bees. The Inſtrument hath this forme. The great ſtraight piece is wood, the reſt are iron claſpes and nayles, the claſpes are looſe in the ſtapes: Two men with two of theſe faſtened to the Hiue, will eaſily turne it vp.

They gather not till Iuly; for then they be diſcharged of their young, or elſe they are become now ſtrong to labour, and now lay in flowers is ſtrong and proud: by reaſon of time, and force of Sunne. And now alſo in the Moyth (and not before) the hearbs of greateſt vigour put their Flowers; As Beanes, Fennell, Burrage, Rape, &c.

The moſt ſeaſonable weather for them, is heat, & drought, becauſe the neſh Bee can neither abide cold or wet: and ſhowres (which they well foreſee) doe interrupt their labours, vnleſſe they fall on the night, and ſo they further them.

After caſting time, you ſhall benefit your ſtocks much, if you helpe them to kill their Droanes, which by all probabilitie and iudgement, are an idle kinde of Bees, and waſtefull. Some ſay they breed and haue ſeen yong Droanes in taking their honey, which I know is true. But I am of opinion, that there are alſo Bees which haue loſt their ſtings, and ſo being, as it were gelded, become idle and great. There is great vſe Droanes.

of them: Deus, et natura nihil fecit frustra. They heate the bees, and cause them cast the sooner. They neuer come foorth but when they be ouer heated. They neuer come home loaden. After casting time, and when the Bées want meat, you shall see the labouring Bées fasten on them, two, three, or foure at once, as if they were thieues to be led to the gallowes, and killing them, they cast out, and draw them farre from home, as hatefull enemies. Our Housewife, if she be the keeper of her owne bées (as she had need to be) may with her bare hand in ỹ heate of the day, safely destroy them in the hiues mouth. Some vse towards night, in a hot day, to set before the mouth of the hiue a thin bord, with little holes, in at which the lesser bees may enter, but not the drones, so that you may kill them at your pleasure.

Annoyances. Snayles spoile them by night like theeues: they come so quietly, and are so fast, that the Bées feare them not. Looke early and late, especially in a rainie or drowsie euening or morning.

Mice are no lesse hurtfull, and the rather to hiues of straw: and therefore couerings of straw draw them. They will in eyther at the mouth, or cheere themselues an hole. The remedie is good Cats, Rats-bane and watching.

The cleanly Bée hateth the smoake as poison, therefor let your Bées stand neerer your garden, than your Brew-house or Kitchen.

They say Sparrowes & Swallowes are enemies to Bées, but I see it not.

More hiues perish by winters cold, that by all other hurts: For the bée is tender and nice, and onely liues in warme weather, and dyes in cold: And therefore let my Housewife bee perswaded, that a warme dry house before described, is the chiefest help she can make her bées against this, and many more mischiefes. Many vse against cold in Winter, to stop vp their hiue close, and some set them in houses, perswading themselues, that thereby they relieue their bees. First, tossing and mouing is hurtfull. Secondly, in houses, going, knocking, & shaking is noysome. Thirdly, too much heate in an house is vnnaturall for them: but lastly, and especially, Bées cannot abide to be stopt close vp. For at euery warme season of the sun they reuiue,

nine, and living eate, and eating must needs purge abroad, (in her house) the cleanly Bee will not purge her selfe. Iudge you what it is for any living creature, not to disburden nature. Being shut vp in calme seasons, lay your eare to the hiue, and you shall heare them yarme and yell, as so many hungred prisoners. Therefore impound not your Bees, so profitable and free a creature.

Let none stand aboue three yeeres, else the combes will be blacke and knotty, your honey will be thin and vncleanly: and if any cast after three yeeres, it is such as haue swarmes, and old Bees kept all together, which is great losse. Smoaking with ragges, rozin, or brimstone, many vse: some vse drowning in *a tub of cleane water, & the water well brewde*, will be good botchet. Draw out your spelkes immediately with a paire of pinchars, lest the wood grow soft and swell, & so will not be drawne, then must you cut your hiue. Taking of Bees.

Let no fire come neere your hony, for fire softeneth the wax and drosse, and makes them runne with the hony. Fire softeneth, weakeneth, and hindereth hony for purging. Breake your Combes small (when the dead empty combes are parted from the loaden combes into a Siue, borne ouer a great bowle, or vessell, with two staues, and so let it runne two or three dayes. The sooner you tunne it vp, the better will it purge. Runne your swarme honey by it selfe, and that shall be your best. The elder your Hiues are, the worse is your honey. Srayning honey.

Vsuall vessels are of clay, but after wood be satiated with Honey (for it will leake at first: for Honey is marueilously searching, *the thicke, and therefore vertuous*) I vse it rather because it will not breake so soone, with falls, frosts, or otherwise, and greater vessels of clay will hardly last. Vessels.

When you vse your honey, with a spoone take off the skin which it hath put vp.

And it is worth the regard, that Bees thus bred, if you haue but forty stocks, shall yeeld you more cõmodity clearely than forty acres of good ground. And thus much may suffice, to make good Housewiues loue and haue good Gardens and Bees.

FINIS. Deo laus.

The Contents of the Country Husewifes Garden.

Chap. 1. The Soyle. Pag. 1.
Chap. 2. Site. p. 2.
Chap. 3. Forme. p. 2.
Chap. 4. *Quantitie.* p. 8.
Chap. 5. Fences. p. 8.
Chap. 6. Two Gardens. p. 8.
Ch. 7. Diuision of hearbs. p. 9.
Chap. 8. The husbandry of hearbs. pag. 10.
Chap. 9. Generall rules. p. 16.
Chap. 10. The Husbandry of Bees. pag. 17.
Beehouse. pag. 17.
Hiues. p. 18.
Hiuing of Bees. p. 19.
Spelkes. p. 19.
Catching. p. 20.
Clustering. p. 20.
Droanes. p. 21.
Annoyances. p. 22.
Taking of Bees. p. 23.
Strayning honey. p. 23.
Vessels. p. 23.

A

MOST PROFITABLE

new Treatise, from approued experience of the Art of propagating Plants : by

Simon Harward.

Chap. I.

The Art of propagating Plants.

There are foure sorts of Planting, or propagating, as in laying of shootes or little branches, whiles they are yet tender in some pit made at their foote, as shall bee said hereafter, or vpon a little ladder or Basket of Earth, tyed to the bottome of the branch, or in boaring a Willow thorow, and putting the branch of the Tree into the hole, as shall be fully declared in the Chapter of Grafting. There are likewise seasons to propagate in; but the best is in the Spring, and March, when the Trees are in the Flower, and doe begin to grow lusty. The young planted Siens or little Grafts must be propagated in the beginning of Winter, a foot deepe in the earth, and good manure mingled amongst the earth, which you shall cast forth of the pit, wherein you meane to propagate it, to tumble it in vpon it againe. In like manner your superfluous Siens, or little Plants must be cut close by the earth, when as they grow about some small Impe, which we meane to propagate, for they would doe nothing but rot. For to propagate, you must digge the earth round about the tree, that so your roottes may be laid in a man-

ner halfe bare. Afterward draw into length the pit on that side where you meane to propagate, and according as you perceiue that the rootes will be best able to yeeld, and be gouerned in
2. the same pit, to vse them, and that with all gentlenesse, and stop close your Siens, in such sort, as that the wreath which is in the place where it is grafted, may bee a little lower then the Siens of the new Wood, growing out of the earth, euen so high as it possible may be. If the trees that you would propagate be somewhat thicke, and thereby the harder to ply, and somewhat stiffe to lay in the pit: then you may wet the stocke almost to the midst, betwixt the root and the breathing place, and so with gentle handling of it, bow downe into the pit the wood which the grafts haue put forth, and that in as round a compasse as you can, keeping you from breaking of it: afterward lay ouer the cut, with gummed Ware, or with grauell and sand.

Chap. II.

Grafting in the Barke.

Grafting in the Barke, is vsed from mid-August, to the beginning of Winter, and also when the Westerne winde beginneth to blow, being from the 7. of February, vnto the 11. of June. But there must care bee had, not to graffe in the barke in any rainy season, because it would wash away the matter of ioyning the one and the other together, and so hinder it.

Grafting in the budde, is vsed in the Summer time, from the end of May, vntill August, as being the time when the trees are strong and lusty, and full of sap and leaues. To wit,
3. in a hot Countrey, from the midst of June, vnto the midst of July: but cold Countries, to the midst of August, after some small showres of Raine.

If the Summer be so exceeding dry, as that some trées doe withhold their sap, you must wait the time till it do returne.

Graft from the full of the Moone, vntill the end of the old.

You may graft in a Cleft, without hauing regard to the Raine, for the sap will keepe it off.

You may graft from mid-August, to the beginning of November: Cowes dung with straw doth mightily preserue the graft.

It

It is better to graft in the euening, then the morning.

The furniture and tooles of a Grafter, are a Basket to lay his Grafts in, Clay, Grauell, Sand, or strong Earth, to driue ouer the plants clouen: Mosse, Woollen clothes, barkes of Willow to ioyne to the late things & earth before spoken, and to keepe them fast: Driers to tye againe vpon ẏ barke, to keepe them firme and fast: Sommed Wax, to dresse and couer the ends and tops of the grafts newly cut, that so the raine and cold may not hurt them, neither yet the sap rising from belowe, be constrained to returne againe vnto the shootes. A little Sawe or hand-Sawe, to sawe off the stocke of the plants, a little Knife or Pen-knife to graffe, and to cut and sharpen the grafts, that so the barke may not pill nor be broken; which often cõmeth to passe when the graft is full of sap. You shall cut the graffe so long, as that it may fill the cliffe of the plant, and therewithall it must be left thicker on the barke side, that so it may fill vp both the cliffe and other incisions, as any need is to be made, which must be alwaies well ground, well burnished without all rust. Two wedges, the one broad for thicke trees, the other narrow for lesse and tender trees, both of them of box, or some other hard and smooth wood, or steele, or of very hard iron, that so they may need lesse labour in making them sharpe.

A little hand-Will to set the plants at more libertie, by cutting off superfluous boughs, holu'd of Ivory, Box, or Hazell.

Chap. III.

Grafting in the cleft.

The manner of grafting in a cleft, to wit, the stock being cloue'd, is proper not onely to trees, which are as great as a mans legges or armes, but also to greater. It is true, that in as much as the trees cannot easily be clouen in their stocke, that therefore it is expedient to make incision in some one of their branches, and not in the maine body, as wee see to bee practised in great Apple-trees, & great Peare-trees, and as we haue already declared heretofore.

To graft in the cleft, you must make choice of a graft that is full of sap and iuyce, but it must not bee, but till from after Ianuarie vntill March: And you must not thus graft in any tree

tree that is already budded, because a great part of the iuyce & sap would be already mounted vp on high, and risen to the top, and there dispersed and scattered hither and thither, into euery sprigge and twigge, and vse nothing welcome to the graft.

6. You must likewise be resolued not to gather your graft the day you graft in, but ten or twelue dayes before: for otherwise, if you graft it new gathered, it will not bee able easily to incorporate it selfe with the body and stocke, where it shall bee grafted; because that some part of it will dry, and by this meanes will be a hinderance in the stocke to the rising vp of the sap, which it should communicate vnto the graft, for the making of it to put forth. And whereas this dried part will fall a crumbling, and breaking through his rottennesse, it will cause to remaine a concauitie, or hollow place in the Stocke, which will bee an occasion of a like inconuenience to befall the graft. Moreouer, the graft being new and tender, might easily be hurt of the bands, which are of necessitie to be tyed about the Stocke, to keepe the graft firme and fast. And you must further see, that your Plant was not of late remoued, but that it haue already fully taken root.

When you are minded to graft many grafts into one cleft, you must see that they be cut in the end all alike.

7. See that the grafts be of one length, or not much differing, and it is inough, that they haue three or foure eylets without the wrench when the plant is once sawed, and lopped of all his small Stems and shootes round about, as also implyed of all his branches, if it haue many: then you must leaue but two at the most, before you come to the cleauing of it: then put to your little Saw, or your knife, or other edged toole that is very sharpe, cleane it quite through the middest, in gentle & soft sort: First, tying the Stocke very sure, that so it may not cleaue further then is need: and then put to your Wedges into the cleft, vntill such time as you haue set in your grafts, and in cleauing of it, hold the knife with the one hand, and the tree with the other, to helpe to keepe it from cleauing too farre. Afterwards put in your wedge of Bore or Brazill, or bone at the small end, that so you may the better take it out againe, when you haue set in your grafts.

8. If the Stocke be clouen, or the Barke loosed too much from the

the wood: then cleaue it downe lower, and set your grafts in, and looke that their incision bee fit, and very iustly answerable to the cleft, and that the two saps, first, of the Plant and graft, be right and euen set one against the other, and so handsomely fitted, as that there may not be the least appearance of any cut or cleft. For if they doe not thus iumpe one with another, they will neuer take one with another, because they cannot worke their seeming matter, and as it were cartilaginous glue in conuenient sort or manner, to the gluing of their ioynts together. You must likewise beware, not to make your cleft ouerthwart the pitch, but somewhat aside.

The barke of your Plant beeing thicker then that of your Graft, *you must set the graft so much the more outwardly in the cleft*, that so the two saps may in any case bee ioyned, and set right the one with the other: but the rinde of the Plant must be somewhat more out, then that of the grafts on the clouen side.

To the end that you may not faile of this worke of imping, 9.
you must principally take heed, not to ouer-cleaue the Stockes of your Trées. But before you widen the cleft of your wedges, binde, and goe about the Stocke with two or three turnes, and that with an Ozier, close drawn together, vnderneath the same place, where you would haue your cleft to end, that so your Sorke cleaue not too farre, which is a very vsuall cause of the miscarrying of grafts, inasmuch as hereby the cleft standeth so wide and open, as that it cannot be shut, and so not grow together againe; but in the meane time spendeth it selfe, & breatheth out *all his life in that place*, *which is the cause* that the Stocke and the Graft are both split. And this falleth out most often in Plum-trees, and branches of trées. You must be carefull so to ioyne the rinds of your Grafts, and Plants, that nothing may continue open, to the end that the wind, moisture of the clay or Raine, running vpon the grafted place, do not get in: when the Plant cleaueth very straight, there is not any danger nor hardnesse in sloping downe the Graft. If you leaue 10.
it somewhat vneuen, or rough in some places, so that the saps both of the one and of the other may the better grow, and be glued together, when your grafts are once well ioyned to your Plants, draw out your Wedges very softly, lest you dis-

place them againe, you may leaue there within the cleft some small one of a wedge of greene wood, cutting it very close with the head of the Stocke: Some cast glue into the cleft, some Sugar, and some gummed Waxe.

If the Stocke of the Plant whereupon you intend to graft, be not so thicke as your graft, you shall graft it after the fashion of a Goates foot, make a cleft in the Stocke of the Plant, 11. not direct, but byas, and that smooth and euen, not rough: then apply and make fast thereto, the graft withall his Barke on, and answering to the barke of the Plant. This being done, couer the place with the fat earth and mosse of the Woods tyed together with a strong band: sticke a pole of Wood by it, to keepe it stedfast.

Chap. IIII.

Grafting like a Scutcheon.

In grafting after the manner of a Scutcheon, you shall not vary nor differ much from that of the Flute or Pipe, saue onely that the Scutcheon-like graft, hauing one eyelet, as the other hath yet the wood of the tree whereupon the Scutcheon-like graft is grafted, hath not any knob, or budde, as the wood whereupon the graft is grafted, after the manner of a pipe.

12. In Summer when the trees are well replenished with say, and that their new Siens begin to grow some-what hard, you shall take a shoot at the end of the chiefe branches of some noble and reclaimed tree, whereof you would faine haue some fruit, and not many of his old store or wood, and from thence raise a good eyelet, *the taple and all thereof to make your graft.* But when you choose, take the thickest, and greatest, diuide the taple in the middest, before you doe any thing else, casting away the leafe (if it be not a Peare-plum-tree: for that would haue two or three leaues) without remouing any more of the said taple: afterward with the point of a sharpe knife, cut off the Barke of the said shoote, the patterne of a shield, of the length of a naple.

13. In which there is onely one eyelet higher then the middest together, with the residue of the taple which you left behinde: and for the lifting vp of the said graft in Scutcheon, after that you haue cut the barke of the shoot round about, without cutting

ting of the wood within, you must take it gently with your thumbe, & in putting it away you must presse vpon the wood from which you pull it, that so you may bring the bud and all away together with the Scutcheon: for if you leaue it behinde with the wood, then were the Scutcheon nothing worth. You shall finde out if the Scutcheon be nothing worth, if looking within when it is pulled away from the wood of the same sute, you finde it to haue a hole within, but more manifestly, if the bud doe stay behind in the Wood, which ought to haue bene in the Scutcheon.

Thus your Scutcheon being well raised and taken off, hold it a little by the tayle betwixt your lips, without wetting of it, 14.
euen vntill *you haue cut the Barke of the tree where you would* graft it, and looke that it be cut without any wounding of the wood within, after the manner of a crutch, but somewhat longer then the Scutcheon ẏ you haue to set in it, and in no place cutting the wood within; after you haue made incision, you must open it, and make it gape wide on both sides, but in all manner of gentle handling, and that with little Sizers of bone, and separating the wood and the barke a little within, euen so much as your Scutcheon is in length and breadth: you must take heed that in doing hereof, you doe not hurt the Barke.

This done, take your Scutcheon by the end, and your taile which you haue left remaining, and put into your incision 15.
made in your tree, lifting vp softly your two sides of the incision with your said Sizers of bone, and cause the said Scutcheon to ioyne, *and lye as close as may be, with* the wood of the tree, being cut, as aforesaid, in waying a little vpon the end of your rinde: so cut and let the vpper part of your Scutcheon lye close vnto the vpper end of your incision, or barke of your said tree: afterward binde your Scutcheon about with a band of Hempe, as thicke as a pen of a quill, more or lesse, according as your tree is small or great, taking the same Hempe in the middest, to the end that either part of it may performe a like seruice; and wreathing and binding of the said Scutcheon into the incision of the Tree, and it must not be tyed too strait, for that would keepe it from taking the ioyning of the one lap to the other, beeing hindred thereby, and neither the Scut-

cheon, nor yet the Hempe must be moist, or wet: and the more iustly to binde them together, begin at the backe side of the Tree, right ouer against the middest of the incision, and from thence come forward to ioyne them before, aboue the eylet and tayle of the Scutcheon, crossing your band of Hempe, so often as the two ends meet, and from hence returning backe againe, come about and tie it likewise vnderneath the eylets: and thus cast about your band still backward and forward, vntill the whole cleft of the incision bee couered aboue and below with the said Hempe, the eylet onely excepted, and his taile which
17. must not be couered at all; his tayle will fall away one part after another, and that shortly after the ingrafting, if so bee that the Scutcheon will take. *Leaue your trees and* Scutcheons thus bound, for the space of one moneth, and the thicker, a great deale longer time. Afterward looke them ouer, and if you perceiue thē to grow together, vntie them, or at the least-wise cut the Hempe behinde them, and leaue them vncouered. Cut also your branch two or three fingers aboue that, so the impe may prosper the better: and thus let them remaine till after Winter, about the moneth of March, and Aprill.

18. If you perceiue that your bud of your Scutcheon do swell and come forward: then cut off the tree three fingers or thereabouts, aboue the Scutcheon: for if it bee cut off too neere the Scutcheon, at such time as it putteth forth his first blossome, it would be a meanes greatly to hinder the flowring of it, and cause also that it should not thriue and prosper so well after that one yeere is past, and that the shoote beginneth to bee strong: beginning to put *forth the second* bud and blossome, you must goe forward to cut off in byas-wise the three fingers in the top of the tree, which you left there, when you cut it in the yeere going before, as hath been said.

19. When your shoote shall haue put forth a great deale of length, you must sticke downe there, euen hard ioyned thereunto, little stakes, tying them together very gently and easily; and these shall stay your shootes and prop them vp, letting the winde from doing any harme vnto them. Thus you may graft white Roses in red, and red in white. Thus you may graft two or three scutcheons: prouided that they bee all of one sort: for they will not be set equally together in height,

because

because then they would bee all starvelings, neither would they be directly one ouer another; for the lower would stay the rising vp of the sap of the tree, and so those aboue should consume in penurie, and vndergoe the aforesaid inconuenience. You must note, that the scutcheon which is gathered from the Sien of a tree whose fruite is sowre, must be cut in square forme, and not in the plaine fashion of a scutcheon. It is ordinarie to grafte the sweet Quince tree, bastard Peach tree, Apricock tree, Iuinbe tree, sowre Cherry tree, sweet cherry tree, & Chestnut tree, after this fashion, howbeit they might be grafted in the cleft more easily, & more profitably; although diuers be of contrary opinion, as thus best: Take the grafts of sweet Quince tree, and bastard Peach tree, of the fairest wood, and best fed that you can finde, growing vpon the wood of two yeeres old, because the wood is not so firme nor solid as the others: and you shall grafte them vpon small Plum tree stockes, being of the thicknesse of ones thumbe; these you shall cut after the fashion of a Goates foot: you shall not goe about to make the cleft of any more sides then one, being about a foote high from the ground; you must open it with your small wedge: and being thus grafted, it will seeme to you that it is open but of one side; afterward you shall wrap it vp with a little Mosse, putting thereto some gummed Wax, or clay, and binde it vp with Oziers to keepe it surer, because the stocke is not strong inough it selfe to hold it, and you shall furnish it euery manner of way as others are dealt withall: this is most profitable. 20 21

The time of grafting.

All moneths are good to graft in, (the moneth of October and Nouember onely excepted) But commonly, graft at that time of the winter, when sap beginneth to arise.

In a cold Countrey graft later, and in a warme countrey earlier.

The best time generall is from the first of Februarie, vntill the first of May.

The grafts must alwayes bee gathered, in the old of the Moone.

For grafts, choose shootes of a yeere old, or at the furthermost two yeeres old.

If you must carry grafts farre, pricke them into a Turney newly gathered, or lay earth about the ends.

If you set stones of Plummes, Almonds, Nuts, or Peaches: First let them lye a little in the Sunne, and then steepe them in Milke or Water, three or foure dayes before you put them into the earth.

Dry the kernels of Pippins, and sow them in the end of November.

The stone of a Plum-tree must be set a foot deepe in November, or February.

The Date stone must be set the great end downwards, two cubits deepe in the earth, in a place enriched with dung.

The Peach stone would be set presently after the Fruit is eaten, some quantitie of the flesh of the Peach remaining about the Stone.

If you will haue it to be excellent, graft it afterward upon an Almond tree.

The little Sions of Cherry-trees, grown thick with haire, rots, and those also which doe grow up from the rootes of the great Cherry-trees, being removed, doe grow better and sooner then they which come of stones: but they must bee removed and planted while they are but two or three yeeres old, the branches must be lopped.

The Contents of the Art of propagating Plants.

THe Art of propagating Plants. page 1.
Grafting in the Barke. p. 2.
Grafting in the cleft. p. 3.
Grafters Tooles.
Time of planting & setting.
Time of grafting.
How to cut the stumps in grafting.
Sprouts and imps: how gathered.
Graftinglike a Scutcheon. p. 6
Inoculation in the Barke.
Emplaister-wise grafting.
To pricke stickes to beare the first yeere.
To haue Cherries or Plums without stones.
To make Quinces great.
To set stones of Plummes, Dates, Nuts, and Peaches.
To make fruit smell well.
To plant Cherry-trees.

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A NEW ORCHARD AND GARDEN — LAWSON